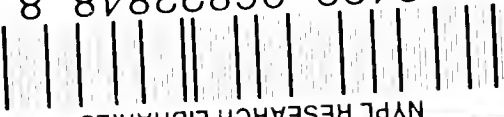


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EVOLUTION IN RELIGION

BY

WILLIAM W. McLANE, PH.D., D.D.

"Natura semina scientiæ nobis dedit." — Seneca.

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PREFACE

SOME thirty years have passed since the publication of Mr. Darwin's work, "The Origin of Species," called public attention to the theory of evolution. Within this time the theory of evolution has gained wide credence and the principles of evolution have been applied to other departments of life than that of the development of animal species.

There are different schools of evolutionists. Prominent among them, however, has been that school which has either denied or ignored the action of any power from above to affect the highest forms of mental and moral life. The members of this school account for the highest moral development of men by ascribing it to a purely human source and a worldly environment and deny or ignore any divine source of moral good and any correspondence with a divine environment. They are like men who would account for the growth and beauty of a lily or a rose by the action of forces resident in the seed and the soil alone, and who would deny or ignore the action and the fact of sunshine in the development of a flower. Through

the influence of this school, largely, and through the influence of the fact that hitherto evolution has dealt mainly with physical forms of life, there are many who think that, if the doctrine of evolution be true, the doctrine of their most cherished religious faith must be false. To such particularly the following pages are commended. Many books have been written upon science and religion. They have commonly been written either from the standpoint of the scientist, and are mainly scientific, or from the standpoint of the theologian, and are mainly religious. It is but recently that books have begun to appear which in a truly scientific method connect the truths of science and of religion. The following work is a contribution to such literature.

As far as personal qualification for such an attempt is concerned, I can only say that I have familiarized myself both with the practical methods of the physical scientist and with the facts upon which the theory of evolution rests, as well as with the phenomena and the facts of religious life. I have not written for the purpose of affirming or of denying the theory of evolution. I have written for the purpose of applying the principles of evolution, on the assumption of its truth, to the moral and religious realms of human life for the purpose of ascertaining the fundamental facts which must underlie moral and religious phenomena. If I had

written only for such as are versed in physical science, a portion of the work might have been omitted. I have introduced in the body of the work a few brief descriptions of animal development for the benefit of such readers as may find these things helpful in enabling them to understand certain scientific statements which are made, and to appreciate the arguments which are based upon those statements.

To those who are familiar with the methods and the facts of physical science, as well as to those who are less familiar with these things, the facts and the arguments of the book are commended as being worthy of candid consideration. I have condensed the work into small compass so as to make it readable, that it may be read by busy people who wish to know the truth, that they may be guided by its light and may find rest and peace in its undoubted certainty.

W. W. M.

NEW HAVEN, Conn., March, 1892.

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THE SPHERE OF SCIENCE



THE SPHERE OF SCIENCE

SCIENCE is a regal word. Science with many is the supreme word. Science, in the realm of knowledge, should wear the crown and wield the scepter. Whatever does not lie within the boundaries of her kingdom and obey the sway of her laws is regarded as belonging to the realm of imagination or rejected as a *terra incognita*, a thing unknown and unknowable.

This claim for Science may be admitted if she be given an imperial place. Hitherto, however, her dominion has been circumscribed and she has been limited to a kingdom. Science has been limited, largely, to the domain of physical phenomena and physical being. If psychical phenomena and psychical being have been admitted within this kingdom, it has been, in the main, only so far as they are embodied and awakened and expressed in physical forms.

That is to say, certain things have been held to constitute the domain of Science ;

the reality of other things has been denied ; or, if their reality has been admitted, they have been relegated to another sphere than that over which Science presides. This limitation which has been set to the domain of Science is being removed. Science is not simply a queen ruling over a single province, but an empress ruling over many kingdoms, and these kingdoms bear a definite relation to each other. It is, at length, coming to be understood and admitted that he is not an enlightened, liberal, and true scientist who would limit, needlessly, the means and the scope of human knowledge ; who would call the palpable knowable because it is near, and the invisible unknowable because it is remote ; who would believe in the speck of sand which he can touch and disbelieve in the star which he can only see.

Nor is he an enlightened, liberal, and true scientist who perceives and admits the reality of objects which are perceived by physical senses and denies the affirmations of inward consciousness ; who believes in physical relationships and realities, and denies psychical relationships and realities.

Therefore, before taking up the scientific investigation of religious phenomena in which feeling and faith are involved, it may be well

to consider the functions and the sphere of Science that we may know her means, her methods, her possibilities, and the reach of her powers.

The function of Science is to perceive and to classify phenomena, to connect them in thought as antecedent and consequent, cause and effect, and to arrive at last at those ultimate forces, factors, and entities whose existence and qualities are apprehended, at least so far as they stand related to other objects, even though their absolute essence and origin be unknown.

The sphere of Science, in reality, is not limited to phenomena which are denominated physical, but comprehends also those phenomena which are denominated psychical and pneumatical. That is to say, Science — the perception, classification, and knowledge of phenomena — is not limited to phenomena like that of a falling body drawn to the earth by gravity and phenomena like the reflex action of an animal organization when a sensory nerve is subjected to peripheral stimulation, but includes also intelligent action like that of building a house for future habitation, and moral action like that of abandoning a house and home on the hypothesis of obligation to a superhuman and Supreme Power.

Science, in the broadest sense of the term, apprehends, classifies, and, so far as the ultimate causes which man can ascertain are concerned, accounts for all actions, forces, and entities which come within the range of human perception, experience, and knowledge.

The discovery of the correlation and conservation of force, the study of physiological psychology, and the many efforts made of late to interpret scientifically all mental, social, and religious phenomena, show how the number of ultimate factors which man must recognize is being limited and the sphere of science extended to embrace all things which come within the scope of human knowledge.

The most recent philosophy which undertakes to account, scientifically, for the origin, growth, and development of the various forms of life which are found in the world is termed Evolution.

According to Mr. Spencer, "Evolution is an integration of matter and concomitant dissipation of motion, during which the matter passes from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity, and during which the retained motion undergoes a parallel transformation."¹

That is to say, matter in its primal form,

¹ Principles of Biology, p. 396.

so far as science can ascertain that form, existed in a mass without division and without parts and the motion of this matter was uniform, working toward one end rather than toward many ends. By the process of evolution, however, this homogeneous matter is divided into parts which become different from each other and definite in form and function, and motion is toward diverse ends so that the variety of forms and the various kinds of movements which now exist in the universe are the result.

According to Mr. Darwin, the most illustrious exponent of vital evolution, this philosophy teaches that from "a few forms or one, through the laws of growth with reproduction, inheritance, variability, struggle for life, natural selection, endless forms most beautiful and most wonderful have been and are being evolved."²

This philosophy is not limited in its application to individual organisms, but embraces also superorganic phenomena and undertakes to account for the rise, growth, and development of all social forms under which animate beings live, love, and labor.

By the term *Law*, in scientific language, is meant the method of motion, the process of

²Origin of Species, p. 429.

progression, the direction of development, and not the force which progresses or the entity which develops. Or, under the term law, we designate the conditions under which motion takes place, progression is accomplished, and development obtains.

In inorganic matter, we distinguish between gravity which is the inherent power that one body possesses to draw another body to itself, or the reciprocal attraction of separate portions of matter, and the law of a falling body which passes through a certain number of feet in the first second of time, three times that distance in the second, and five times that distance in the third second, its velocity increasing as the odd numbers one, three, and five.

In like manner, we distinguish between electricity and the laws of electricity, which are the conditions of its manifestation and the methods of its action.

By the laws of chemical affinity, we mean the conditions under which substances will act, chemically, upon one another and produce the new forms which uniformly follow this action. For example, hydrogen and nitrogen gases under ordinary circumstances do not unite if mingled in the same vessel; but when these two gases are set free at the

same time from the decomposition of some substance, they readily combine. Or if copper is dissolved in sulphuric acid, a blue, semitransparent substance is obtained; but if iron is treated in the same manner, it yields a light green product. By law, then, in this connection, we mean the condition under which chemical action takes place, and the sequences of such action.

In like manner, we mean by the laws of organic evolution: (*a*) the conditions under which a living entity evolves; (*b*) the line along which it evolves, determining the form which it assumes; (*c*) the environment which modifies that development. For example, in the case of an ovum we consider: (*a*) the conditions of its becoming an embryo; (*b*) the direction of its development; (*c*) the environment which modifies its development and aids in determining its ultimate form; and the laws of superorganic evolution are similar. Law may be defined as the order of sequences, force as the agent of sequences, and cause as the ultimate source of force.

The study of laws must lead the human mind to the recognition of force and also to the recognition of that which to the mind must constitute the primal source of force, even cause, which, Locke says, "is a substance

exerting its power into act, to make one thing begin to be.”

Science, therefore, perceives the fact that all laws are a revelation of the action of some force, force is a revelation of some antecedent cause, and cause is a proximate or primal substance or reality from which the force proceeds or in which it inheres and to which it may properly be said to belong.

The investigation of religious phenomena, which will subsequently be pursued in this treatise, is designed to lead to the scientific recognition of those primal causes, that is to say, those substantial realities which underlie those phenomena.

THE PHENOMENA OF LIFE



THE PHENOMENA OF LIFE

AMONG the various forms of being which are all about us, there are some which by reason of certain peculiarities are termed living entities.

The simplest plant, like the lowest of the algæ, is a single circular cell. The loftiest and most luxuriant plant is composed of manifold cells combined in one organic whole. The simplest form of animal life, in which we are most particularly interested, is also a single cell. One of the simplest organisms known to biologists is that which has received the name of amœba. The amœba is to be found in pools and puddles or wherever water lies stagnant. Under a strong microscope it looks somewhat like a single drop of water, or rather transparent jelly, whose interior is granular. Under the microscope it may be seen putting out a process like a slimy finger, and then the whole body flows after this process. When it touches food, it flows around it, becoming hands to grasp it, mouth to

swallow it, stomach to dissolve and digest it, and it then ejects, or rather flows away from, the parts which are unsuitable for food. This drop of slimy substance is of great interest to the biologist; for by means of the property called life this minute mass of protoplasm breathes, moves, eats, and finally multiplies by dividing into two parts and thus becoming two creatures instead of one. The amœba is also of great interest to the physiologist; for in its life the problems of physiology are reduced to their simplest forms. The amœba is of interest to the evolutionist because it is a typical form of life. It is a typical form of life; for the youngest eggs in the ovary of a fowl, in common with the ova of all other animals, present the characters of a single cell; and the ripe ovum of a mammal is a minute, spherical mass of a soft, gelatinous, transparent, granular-looking substance. The amœba is a typical form of life; for if blood be examined under a microscope, it will be found to contain red and white corpuscles, the white ones of which change their form with movements similar to those of the amœba and hence are called amœboid movements. If any part of an animal body be examined under a microscope, it will be found to be formed of cells whose form

has been modified to suit the function to be performed, and whose shapes are spherical, cylindrical, or irregular, as the case demands.

There is another primitive form of life which may be noticed in passing as illustrating the means by which the grade and relations of a living being are determined. When the tide is out, there may be seen underneath the overhanging rocks of the sea-shore a number of small, dark, jelly-like masses looking like acorns clinging to the rocks, which are called sea-anemone. When the tide comes in bearing small, floating sea animals upon which the anemone may feed, these masses of jelly-like substances open and unfold like a flower, throwing out processes like the petals of a daisy, and shooting out fine threads which pierce and capture their prey, which is then swallowed and digested, much as the amœba swallows and digests its food. These anemones, which now look like a dark mass of jelly glued to the rock and now like blooming, beautiful flowers of a brilliant green and red and yellow, show, by their structure and their simple organs, their proper habitat, the nature of their hunger, the quality of their food, the scope of their relations, and hence the grade of their life and the character of the environment with

which they correspond. We are prepared now to inquire, What are the fundamental properties of animal life?

The first peculiar property of a living entity is power of motion. This motion originates from within and not from without.

Plants possess power of motion toward the light, and also, as showing that the motion is not like that caused by attraction, some possess power of motion from the light.

Plants move in opposition to the attraction of gravity, and also, as showing that the motion is not like the repulsion of magnetism, some plants move in the direction of gravity. This power of motion, by which material substance is organized by another force than that of gravity or chemical affinity and forms of beauty and strength are built up, is one of the properties of all forms of organic life.

Another peculiarity of life, especially in the animal kingdom, is irritability. This property is susceptibility to impressions from without, which produce action originating within the living form.

For example, a slight touch which would not displace a grain of sand subject to the action of gravity and like forces, will cause a sea-anemone to draw in its tentacles and

to infold itself into a compact semiglobular mass.

Of this property Dubois Reymond remarks: "A new incomprehensible appears in the shape of consciousness even in its lowest form, the sensation of desire and aversion. It is once for all incomprehensible how to a mass of molecules of nitrogen, oxygen, hydrogen, carbon, phosphorus, and so on, it can be otherwise than indifferent how they lie or move."

The movements of a living body are not always caused by some external stimulus, but in many cases the energy set free must come from internal changes, and the movements consequent upon these changes are called spontaneous or automatic.

Again, a living organism is receptive and assimilative; it does not increase in size by an external accretion of homogeneous matter, but it increases by taking into itself foreign material and changing it into new, living protoplasm, which becomes part and parcel of its own substance. A living thing has a transforming power.

Again, a living organism has power of reproduction. A crystal delicately and beautifully formed as though a vital force had arranged its parts, cannot produce another

crystal. If broken up, its substance could again, under favorable circumstances, be formed into another crystal, but it can never be increased to two crystals of like quality and size.

On the other hand, an amœba, if destroyed, could never be re-formed from the same material, but an amœba can convert matter into protoplasm and resolve itself into two parts, each of which is a fresh unit or individual.

These properties — automatic action, irritability, contractibility, receptivity, power of assimilation, and power of reproduction — are the chief characteristics of organic life.

The question, Whence comes life? cannot be answered by physical science. Science can penetrate to those depths of the earth's structure in which there is no trace of former life. Science finds at certain points traces of forms of life which are now extinct. Science perceives and classifies manifold forms of life which now abound on every hand. But Science cannot discover the essence and the origin of life. Mr. Haeckel says the "assumption" of spontaneous generation "is required by the demands of the human understanding for causality." ¹

¹ Evolution, vol. ii, p. 31.

There are three difficulties in the way of this theory. (a) It is simply and solely an assumption without scientific support. (b) Life is not the result of material organization or of chemical composition. The juxtaposition, in organic form, of all the material elements which enter into the formation of a living body and the presence of all the chemical elements found in such a body never produce life. (c) Life exists in certain forms without organization. As Mr. Spencer says: "We find specks of protoplasm manifesting life and yet showing no signs of organization."¹

The most careful experiments which have been made by such eminent scientists as Mr. Dallinger and Professor Tyndall have failed to produce life from non-living matter and germless air. Mr. Tyndall says: "I affirm that no shred of trustworthy experimental testimony exists to prove that life in our day has ever appeared independently of antecedent life."

Milne Edwards, in his elaborate work on Physiology, says that "no example of spontaneous generation has been established: "Aucun exemple de ce que l'on appelle génération spontanée ou archigonie n'a été constaté."²

¹ *Biology*, vol. ii, p. 12.

² *Fonctions Mentales*, p. 258.

Dubois Reymond says: "The appearance of consciousness even in its lowest forms marks one of the limits of natural science." And Mr. Darwin, with his accustomed candor, says: "Science as yet throws no light on the problem of the essence or origin of life."¹

So far as Science speaks upon the subject she repeats the old proverb, "Omne vivum ex vivo."

It is more in accordance with the known facts and more in harmony with the spirit of Science, to assume that there is some underlying life which manifests itself in manifold forms, or which originally imparts to living things that particular property which distinguishes them from non-living things, than to assume spontaneous generation as the cause of life. Indeed, even the conditions of life must not be confounded with the cause of life.

Our sphere of positive knowledge may be clearly and concisely stated and defined in the words of Lotze: "We shall never discover how existence and its modes originate or what it is of which things consist. The mode of existence of all things is for us unfathomable; but what it is not given to us to know forms not the core of things but

¹ Origin of Species, p. 421.

rather a husk, not the content of their being but the nature of the order through which they become what they are. *What* things are is thus not incomprehensible to us, for that which is in them they exhibit in their outward manifestation. *How* they can exist and can manifest themselves anyhow is the universal enigma.”¹

Accepting the limitations which are thus thrown around us, we come to know *what* things are from their actions, their relation, and their attributes.

Mr. Spencer says, “Life is the continuous adjustment of internal relations to external relations.” By this definition, we are not to understand that the relation constitutes the life, but that a living thing exists in relation, and that the continuance of its being depends upon its proper adjustment to those things with which it stands in relation and continued correspondence with them.

Mr. Spencer further says: “The definite combination of heterogeneous changes, both simultaneous and successive, in correspondence with external coexistences and sequences, is our conception of life.

“Greater correspondence must, other things being equal, show itself both in

¹ *Microcosmus*, vol. i, p. 192.

greater complexity of life and greater length of life. As affording the simplest and most conclusive proof that the degree of life varies with the degree of correspondence, it remains to point out that perfect correspondence would be perfect life."

We must distinguish between the life and the changes which take place in a living thing. For example, the changes which occur in the retina of an eye upon the impact of light, and the molecular action which takes place subsequently in the optic nerve and in the central portions of the brain in which it terminates, by which the sensation of vision is awakened, are neither light nor life, but are produced by an agent — light — acting upon an organ whose peculiar property is imparted to it by the life of a body of which it forms a part.

A living being may be defined as an entity in which resides that mysterious element called life, by which a relation not otherwise existing is established with certain coëxistences, and susceptibility to impressions received from them, or power to act upon them, or in some instances the possibility of reciprocal action is established.

We may determine what a living thing is by the following remarks: (*a*) by the stim-

uli by which it is acted upon; (*b*) by the character of the reflex action produced by such stimuli; (*c*) by the number and nature of coëxistences with which it is in correspondence; (*d*) by the reciprocal action which takes place between it and other entities; (*e*) by the product of its internal activities, however called into exercise.

That consciousness which consists of the sensation of feeling, of desire and aversion, however low and feeble, of a certain perception of selfhood, is the fundamental characteristic of animal life. Wundt says: "It cannot be doubted that from man down to the protozoa consciousness is a property of a living being." "Vom Menschen herab bis zu den Protozoen das Bewusstsein ein allgemeines Besitzthum lebender Wesen ist, kann nicht zweifelhaft sein."¹

In the various forms of life this perception, this feeling, this consciousness differs in the grade of its development.

The fundamental sense is that of feeling and the first special organs are those of touch. Wundt says: "The view gained from the observation of the lowest organisms, that all sensations of the senses, or sense perception, have their common ground in the

¹ Grundzüge Der Physiologischen Psychologie, vol. 1, p. 21.

sense of feeling, finds its verification in the history of the development of the organs of sense. The latter show that the specific organs of sense, from the lowest organisms to men, are developed out of the covering of the body. This development divides itself in a twofold direction: — (1) In the perception of the common sense of touch by the formation of particular organs of touch (Tastapparate); and (2) in the formation of specific organs of sense (Sinneswerkzeuge). Through the first of this development certain parts of the sense of touch become sensible to the common impressions of touch; through the second, they pass through a metamorphose in consequence of which certain stimuli of the senses, such as sound, light, substances which may be tasted and smelled, can act upon the terminations of the sensory nerves.”¹

If these special organs are developed from within the animal body, they reveal an inward need of correspondence with some outward substance and an adaptation to that substance determined by that need and by the nature of the substance. If these special organs were developed originally by the action of the external substance, — that is to say, if

¹Grundzüge Der Physiologischen Psychologie, vol. 1, p. 280.

the eye were formed by the action of light, and an ear by waves of air,—they would still reveal a relation to the environment of light and air. If both the inward movement of the animal body and the outward action of the stimuli coöperated in the production of the organs of sense, the same fundamental facts would be shown. As already remarked, therefore, the grade and degree of life of any living being may be determined by its inward craving for any object and adaptation to that object, by its susceptibility to stimulation and by the number and the nature of objects with which it corresponds.

The development of organs of sense perception marks gradations of life. The lowest forms of life, such as an amœba floating in the water and changing its place or securing its food by a movement of its entire mass, or a sea-anemone clinging to a rock and securing its food by the action of its threadlike tentacles, shows that their sense is one of touch. But higher forms of life, which have the senses of smell, sight, and hearing, possess a finer organization and a higher development, and are sensible to the touch of minute particles of matter floating in the air and to the impact of light and to the vibrations of air set in motion by the concussion of foreign bodies.

The end-organs of sense give only specific sensations when stimulated, as shown by the fact that an electric current, if conveyed to the finger, the tongue, and the eye by means of a wire, would produce the sensation of feeling, taste, and vision, according to the organ which it stimulates.

One of the first sensations, perhaps the first in many forms of life, which arises from within is that of hunger, and the edible quality of surrounding things is that which makes them to be appreciated and desired. The low forms of shellfish which adhere to the rocks and open their shells to feed upon that which is borne to them by the tide receive what to them is edible and reject the non-edible.

We may say that hunger, not of the body simply but of the mind also, — the craving for something without to meet a want arising from within, — is a characteristic of the grade of life and an exponent of its quality. The craving in the higher forms of life for knowledge, beauty, love, is just as much an index of the inner life as is the craving for food on the part of the lower forms of life. The poet Spenser expresses this when he says: —

O sacred hunger of ambitious minds!

Sexual appetite, which, next to hunger, exercises the greatest influence in the lower forms of animal life, bears relation to the life of the species and not to the life of the individual and may be passed by under the present classification.

In the higher forms of animal life, we find that there are sensations caused by certain forms or colors or combinations of form and color, or by peculiar sounds, which are mental rather than physical in their nature, and which lead the observer to the recognition of certain psychical senses.

The first of these is the æsthetic sense. The appreciation of physical beauty is not limited to the human race, but is possessed also by at least some birds and beasts, especially the former, and I shall not undertake to define the limit of its existence. The ornamentation of their nests by humming birds, the decorations of their playing passages with gayly colored objects by bower-birds, the display of their beautifully colored plumes by some male birds in the presence of the female indicate a sense of beauty. Why certain sights and sounds please more than others we may not be able to explain; but the delight awakened by some and not by others shows that there is an æsthetic sense which is capable of discrimination.

Among savage men the coloring of the eyelids, the nails, the hair, the painting of the face, the tattooing of the body, and the decoration of the person by means of feathers and jewels prove an inherent sense of beauty, even if the means of gratifying it should not commend themselves to cultivated men.

Among civilized men the sense of the beautiful manifests itself in the adornment of landscapes, in the selection of raiment, in works of architecture and of art. This æsthetic sense is unquestionably an index of the life to which it belongs, and, as it perceives simply physical beauty or perceives also moral beauty, it is an evidence of the grade and extent of the life of the creature in which it exists.

Beyond this æsthetic sense, there is also an ethical sense. I shall not undertake at this point and time to seek the origin of conscience or to inquire whether it arises from the social instincts or not. My present purpose is simply to call attention to the fact of its existence, as one might call attention to the existence and function of an eye.

Among animals there is often a denial of self for the sake of the young, a risk of life to save the life of another, a refraining from what mere physical appetite would appropri-

ate, as when a dog guards his master's dinner and will not eat it—a sense of relation to other beings and of obligation to them.

On the part of many tribes of men this sense is largely developed and discriminates not simply between different acts, as that of killing or saving life, but between different acts of the same kind, leading to the condemnation of taking food or the gratification of physical passion under certain circumstances, although the act may be good in itself and would be approved of under other circumstances. This moral sense is one of the noblest endowments of living beings, leading to the highest acts in their relation to one another of which they are capable. This moral sense is the highest exponent and evidence of the qualities and the relationships of the life to which it belongs.

Out of the appetites and passions, the perception of qualities which gratify the æsthetic taste and the sense of relation to other beings, various societies are formed among animals and men.

The lowest forms of animal life, fixed as some of them are in one place, feeding alone and reproducing their kind by fission, have no social relations.

With the appearance of sex, sexual relations

are necessary, and to this is added care of offspring, which is a carrying out the law of self-preservation. Societies are formed for defense against common foes, as in the case of certain wild animals like the buffalo, which in time of danger place the cows and the calves in the center of the herd.

Societies are formed, in part at least, for coöperation, as in the case of bees and ants. In the case of men, however, societies are not limited to those established by sexual and parental relations, nor to those which are designed for mutual defense and coöperation. There are societies which confer no benefit, that is, no benefit which appears within the limits of temporal vision, on those who compose them. There are societies which defend those who can give no defense in return and which provide for the wants of those who can perform no reciprocal service. That is to say, there are societies which cannot spring out of selfishness, which is undoubtedly the fountain of many social organizations, and which cannot be brought within the lines of ordinary social instincts. There are societies formed out of pure love and for the benefit of those who can make no return and who have no claim of relationship; a society for the prevention

of cruelty to animals will serve as a single illustration, to which many more might be added. There are societies, also, formed on the basis of a sense of relation (some may call it a mistaken sense) to a Supreme Being, to whom love and service are due ; and the existence of such societies must be accounted for by any comprehensive philosophy, as well as the existence of any other social organization.

The products of living beings are also manifold and give evidence of the degree and quality of life and also of the range and nature of relations.

The products of living beings vary from the shells secreted for individual protection by many of the lowest animals, through the gradations of nests of birds for the protection of the young, the cells of bees for the storing of honey for future use, and the cities of ants with their streets and compartments for their dwelling place, up to the works of men, whose habitations and temples, whose works of literature and art, whose acts of government and worship, mark the range of their thoughts and feelings and sense of relationship.

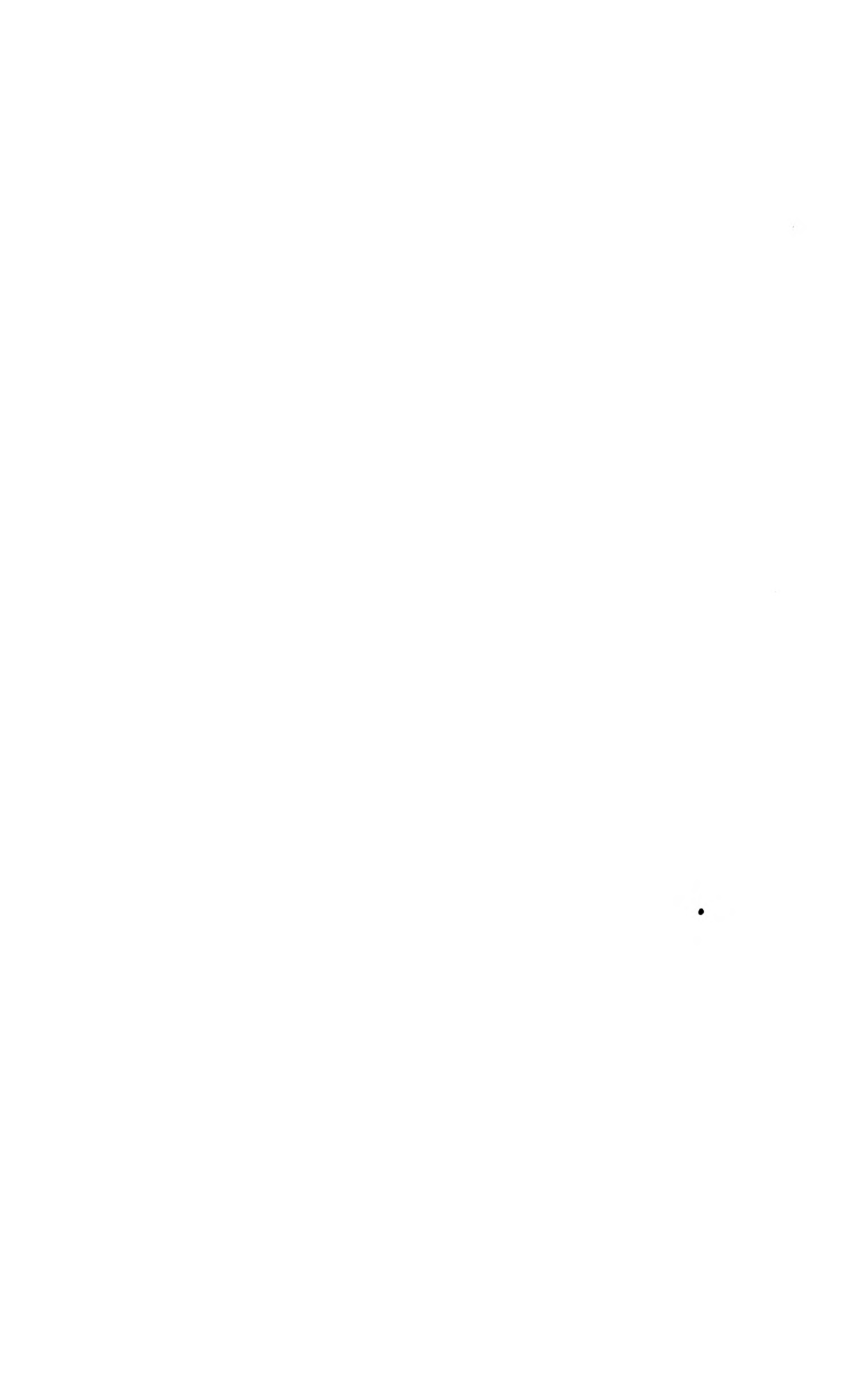
All these varieties of life, these manifold forms of sense perception, these æsthetic and

ethical senses, these manifold social organizations, these products of skill and thought and feeling must be accounted for by any true and comprehensive science. The existence of these things, whatever their origin, depends upon certain conditions which can be ascertained and known.

Whether all varieties of life have been developed from a few forms or not, — an hypothesis which many hold, — that the various forms of life are capable of development, as shown in improved forms of vegetable life under cultivation, in the improvement not simply in body but also in disposition on the part of animals under domestication, and in the education and moral elevation of men, is indisputable.

There are certain laws of life, growth, and development which obtain, and it is my purpose to state briefly some of these accepted laws and to apply them to moral and religious phenomena for the purpose of ascertaining the essential realities which must underlie these phenomena.

THE RELATION
OF THE LAWS OF EVOLUTION
TO RELIGION



I. THE LAW OF HEREDITY

THE first law of evolution is that of heredity. According to this law, that like begets like, the inherent nature of an organism is the prime factor in accomplishing its development and in determining its character.

The lower orders of life, like the amœba, which multiply asexually, reproduce their kind. The spawn ejected from the bodies of fish or frogs and left floating in the water reproduces the original parent form.

In the oviparous and mammalian species, the law of heredity is so apparent as to need no illustration. The development of a single ovum follows this law, combined with the law of specialization. The youngest ovum of oviparous and mammalian animals consists of a naked protoplasmic body containing a nucleus or germinal spot and inclosed in a capsule of epithelium, and the mature ovarian ovum is likewise a single cell.

When an ovum becomes impregnated by means of the entrance into it of a spermatozoön, which may itself be regarded as a single cell, a process of segmentation takes place, which consists in the division and multiplication of the ovum into a number of cells, of which all the cells of the future animal are the descendants, these cells differing from the original ones only in becoming specialized for the various functions which they are to perform. There are two facts which are especially worthy of note, and to which attention is here called, found in comparing the origin, growth, and mature forms of the individual members of the various animal species. The first is the fact that at the point of origin the ova and embryos are similar, if not identical, in substance, structure, and form, and become differenced as they develop, until at birth, and further still at maturity, they are widely separated from each other.

The second fact is that the higher orders of animals, such as the mammalia, and, notably, man, in the course of their development pass through stages at which the lower orders of animal life and the lower orders of mammalia remain fixed.

Mr. Darwin says: "Man is developed from an ovule which differs in no respect from the

ovules of other animals.”¹ But Mr. Haeckel admits that the human ovum differs from other ova.²

It is true, however, that in its earliest stage every organism has the greatest number of characters in common with all other organisms in their earliest stages, and the differences become apparent and marked as the later stages of development are reached. It would be more correct to say that the likenesses displayed by living beings at various stages of their development are approximate, than to say that they are precise. Scientifically, it is more correct to say that up to a certain point the embryo of a fish and the embryo of a man are similar, and that up to another point the embryo of a reptile and the embryo of a man are similar, than to say that the embryo of a man is at one time like a fish and at another time like a reptile. The process of the foetal development of a human being is one in which the differences between it and the lower orders of animal life become from time to time apparent and appreciable.

The second fact to which attention has been called is that the higher orders of animal life pass through stages at which the lower orders

¹ *Descent of Man*, vol. i, p. 14.

² *Evolution*, vol. i, p. 132.

remain fixed. The germ of a human being is at first like the germs of all animals; then it is unlike the annulose and the mollusca, and like the vertebrata; then it is unlike fishes, reptiles, and birds and like mammals only; then it is unlike the implantal mammals and like the placental mammals alone; then it is unlike any save the fœtus of the quadrumana; and finally, at birth, it is only like the infants of the human race.

These facts are significant; for it is not the seed but the plant, not the bud but the blossom, not the flower but the fruit which reveals the real life and inherent character of a living thing.

It is not the resemblances which are to be found in the germs of living beings, but the resemblances which are to be found in mature forms that indicate the degree and the scope of relationship existing between them.

If we would inquire the cause of the superior progress on the part of some germs in process of development, we must seek for it in their environment, or in their chemical composition, or in that mysterious principle which we call life. After we have made all possible allowance, however, for the influence of environment and for the action of chem-

ical substances upon each other, there remains a residuum of action and effect which can be accounted for only by ascribing it to the quality of the life which inheres in an animate being. Two germinal, protoplasmic entities of like chemical substance and similar circumstantial conditions will develop into very different living beings.

The only philosophy which will account, scientifically, for the fact that a human ovum in the course of its development passes through stages at which the lower orders of animal life stop, and attains a vastly superior grade of organization and a broader and higher range of relationship and correspondence, is the philosophy which ascribes this difference to a superior vital force dwelling in the impregnated ovum and revealing its essential nature and power in the process of its development.

We may account for this power, so far as the law of heredity is concerned, in one of three ways. In order to state the first of these I must now introduce what would more properly come under the law of correspondence, or "the survival of the fittest." There are two facts well known to biologists: (*a*) plasticity and variability are greatest in the earliest and simplest forms of life and

decrease with age and with the complexity of living forms; (*b*) the disuse of an organ causes atrophy and the failure to use a power causes the loss of that power.

In proof of the first of these statements,— that plasticity and variability decrease with the complexity of living forms,— the following facts may be cited: (*a*) rudimentary parts are highly variable, but when the parts are developed in special directions they lose their variability; (*b*) the power of reproducing lost parts is highest where the organism is lowest, and almost disappears where the organism is highest. Some of the low forms of life may be cut in two and each part will live and become a complete being of its kind; but in the highest forms of life no important organ, if lost, can be reproduced, and the power of healing a wound is very limited; (*c*) in the lower organisms vicarious action of some parts is possible, but in the higher organisms this vicarious action ceases almost or altogether. A frog may exist a long time without lungs and respiration may be carried on through the skin; but if one of the highest vertebrates were to be deprived of lungs, death would immediately ensue. These facts,— that the variability decreases as the form of life rises until at length no new organ is ever

formed and preëxisting organs vary only in a limited degree; that the power of reproducing lost parts and of repairing injury decreases with the advancement of the grade of the organization; and that vicarious action of one part for another decreases as the grade of life rises,—all prove that there is a limit set to the specialization and functional activity of organic life.

The second fact of the loss of power and atrophy of an organ from disuse is sufficiently illustrated in the rudimentary organs, which remain in an embryonic state in an animal body, but which have no functional part to perform.

In accordance with these facts, we may say, as the extreme evolutionist would say, that the original living germ or germs possessed latently and potentially the capacity and the power to produce, under favorable conditions, in the course of generations, the highest forms of life, and but few germs have fallen under those conditions which made such production possible. Hence there has been, historically, degeneration as well as development, and progression laterally as well as vertically. For example, from the point at which we find fossil remains of reptilian fishes, or fish-like reptiles, there was

divergence in two directions, resulting in typical fishes and typical reptiles; from the point at which there were reptilian birds we have divergence resulting in typical birds as well as typical reptiles.

That is to say, in the process of evolution through the orders of mollusks, fishes, reptiles, birds, and mammals, some germs fell under those conditions, or chose, as it were, that correspondence and course which developed certain faculties and powers, and other germs took a different course, and so lost forever the opportunity of rising higher, and lost, through misuse, even the potential power of rising; and so we have to-day orders of living beings whose germinal powers and possible correspondences far surpass the innate powers and possible correspondences of other orders of living beings. As Le Conte says: "There is but one straight and narrow way to the highest in evolution, as in all else, and few there be that have found it—in fact, probably two or three only at every step. Some animals have diverged from that way. In their ancestral history they have lost the golden opportunity, if they ever had it. It is easy to go on in the way they have chosen, but impossible to get back on the ascending trunk line."

A second way by which we may account for the superior power possessed by some germs is to assume that there was imparted originally to some germs a vital force superior in capacity and power to that which was imparted to other germs. Mr. Darwin himself says, in *The Origin of Species*, "I believe that animals are descended from at most only four or five progenitors, and plants from an equal or lesser number."

Or, in the third place, it may be assumed that there has been imparted to some germs additional power in the course of their progress to enable them to pass beyond the limitations hitherto set and to reach a higher grade of relationship and correspondence, and so to develop a higher and more perfect and complete life.

It may be remarked, however, that to the observer looking on from without, the impartation of an invisible and impalpable force at any point would be unnoticed, and the appearance would be the same as though external conditions, and not an inner change, were the cause of the changes observed. These latter explanations of the superior power possessed by man may be most acceptable to some who hold the general principles of evolution to be true; but the first

assumption is in full accordance with the most pronounced theory of evolution. The first law of evolution reveals a vital limitation in organic structures and functions of animal life. The growth of an organism depends not only upon the supply of nutriment, but also upon ability to appropriate it. Under the very same conditions, and with an unlimited supply of nutriment furnished, a different size and grade of life will be attained by different organisms. "Among the protozoa each kind has a tolerably constant adult size." And one general fact to be noted respecting all organic growth is that it has limits. How shall this limitation be accounted for? Shall we say that an equilibrium is established between internal and external forces? That would be simply to confess that the internal, or vital, force has reached the limit of its power to control external forces for its own use and advancement; but it does not explain why it has reached this limit. Shall we say that this limitation is due to the maturity of the reproductive powers, and that increase is thenceforth not for the individual part but for the species? In reply to this assumption, we note the facts, that the maturing of the reproductive power, especially in mammals,

is accompanied by increased growth; that the non-use of this power does not add to growth, at least not to any considerable extent; and that the loss of this power, at least in many animals when they are young, lessens growth,—all of which facts are against the hypothesis that limitation is due to reproduction. We are driven to the conclusion that this limitation, like the limit of the distance at which magnetism acts effectively, like the limit of the distance at which certain substances will act chemically upon each other, like the proportions in which certain substances will combine, is a limit which we find existing, and which cannot be explained by environment, and must, therefore, be ascribed to heredity, and denominated a vital limitation, a limitation from within the living organism and not from without it.

This limitation, imposed by the law of heredity, is curiously illustrated in the case of those forms of life in which the offspring differs from the parent and passes through a metamorphosis, as in the case of such Lepidoptera as the butterfly.

The offspring begins its animate life as a grub, and is metamorphosed into a winged insect like the parent form; but the wonder-

ful transformation which here takes place reaches a limit when the parent form is reproduced.

In the case of Amphibia, also, which undergo a metamorphosis, during which a change takes place from aquatic respiration by means of gills to an atmospheric respiration by means of lungs, the same law is illustrated. The tadpole becoming a frog will afford a familiar example. There is a yet more interesting and curious illustration of this principle of limitation in the case of certain forms of life in which the offspring both differs from the parent and has power of reproducing itself. There are certain animals, such as the salpa and dolium, of the order of Tunicata, and also certain mites which produce offspring wholly dissimilar to the mother stock. These offspring have the power of reproducing themselves, if not by sexual means, as at the first generation, yet by the formation of sprouts, that is, by gemmation, and it is only animals originated by the second generation, and in many species even those of the third generation, which return again to the form of the first generation. Plant lice transmit themselves by means of gemmation through six, seven, and even ten generations, and then at last

a generation appears which lays eggs, and the variation is terminated and the circle completed.

This return after so many generations to the original parent form is a striking indication, not only of the general law of heredity, but also of the limitation set by that law and of the superiority of the vital force to the other forces which may act upon the offspring when they differ from the parent, to preserve the peculiar type of the species. This fact then must be noted of organic development: that the first law of evolution, that of heredity, the principle that like begets like, does not account for the origin of anything at all but only for the perpetuation of that which has prior existence. For our present purpose, which is psychological and moral, it is sufficient to say that under the first law of evolution, that of heredity, we maintain as clearly and fully illustrated in nature that "that which is developed must have been first of all enveloped." The same law of heredity which we have observed in organic life obtains in the sphere of mind. The reappearance of the instincts, passions, and actions of the parent in the progeny is so common and universal as to clearly establish the fact that mental life is transmissible.

Descent from two parents, different surroundings, and the formation of new habits of life make oftentimes a marked difference between the human parent and his offspring, especially if the offspring is remote ; but the mental and moral likeness of children to one or both parents, the reappearance of the same mental peculiarities through several generations, the permanence of national and race peculiarities through centuries are so manifest and well known as to need no citation of examples in this place to verify the law of intellectual descent.

That mental life is connected always within the range of human experience with a nervous organization and a nervous center is also a well-known fact. It is impossible, however, to account for the origin of mental life by a purely physical and mechanical theory of animal existence. Chemical constituents of the brain, such as cholesterein, neurokeratin, cerebrin, nitrogenous and non-nitrogenous, phosphorized and non-phosphorized elements, do not produce thought and volition. Consciousness, the distinctive element of mental life, even in its lowest form must be accepted as something as original as life itself. There is a spontaneous power which is the source of mental action and which more than aught

else determines the form and scope of that action. The simplest protoplasmic organism whose only sense may be the sense of touch is not only endowed with that irritability which makes a sense impression possible but also with that spontaneous power which goes forth in feeling after external objects. Any one who will watch an amœba under a microscope will be impressed with its evident power of generating action from within itself. If we must finally admit so much native power, we have no facts which compel us to limit to this lowest form the native mental endowment of original forms of life. In proof of this assertion we adduce the fact that there are many actions called instinctive which are evidently thus spontaneous. We can, I think, come to no other conclusion with respect to the origin of even some complex instincts when we reflect on the marvelous instincts of sterile worker ants and bees which leave no offspring to inherit the effects of experience and modified habits. This admission of spontaneity is an admission of the native power of mind. This power, and not environment, is the primary factor in determining the extent of mental action. Inherited memory, which some regard as the origin of instinct, will account for the active

exercise of any given faculty, and if the inheritance is improved upon, the faculty may be improved; but inherited memory will neither account for the origin nor for the sudden appearance of any new faculty, and the original appearance of any such faculty is evidence of a new power awakened within the subject in which it appears. Inherited memory as the basis of instinct gives no account of the origin of instinct.

Imitation, also, which will account for growth to a limited degree, will not account for the origination of a faculty or power. Imitation can only take place where there is something to imitate. Imitation does not account for first actions, which must be spontaneous, springing from within.

“In what manner,” says Darwin, “the mental powers were first developed in the lowest organisms is as hopeless an inquiry as how life first originated.”¹

Mr. Romanes, in his work on *Mental Evolution*, says: “The distinctive element of mind is consciousness, the test of consciousness is the presence of choice, and the evidence of choice is the antecedent uncertainty of adjustive action between two or more alternatives.” “Consciousness,” says Schopenhauer, “is the fruit of underlying life.”

¹ *Descent of Man*, vol. 1, p. 35.

To these observations we may add, therefore, that the character of the choices reveals the quality of the consciousness from which they proceed, that the quality of the consciousness reveals the quality of the mental life, and that the mental life is a reality whose origin is as unknown to science as the origin of matter or the origin of any other form of life, but whose existence is accepted as a fundamental fact.

The points of mental similarity between man and the animals next to him in the scale of being are numerous. The instincts of self-preservation, of sexual love, of love of offspring, the delight of at least some animals in jest and sport, the feeling of curiosity and wonder, the faculty of memory and reason are common to animals as well as to man. The mental differences between man and the higher animals lie in the range of perception, in the qualities perceived in objects, in the number and kind of relationships which are recognized; in the power of analysis, abstraction, generalization; in the power of reflection and speculative thought which constitute the higher ranges of intellectual life; and, pre-eminently, in a consciousness, sometimes dim and faint, sometimes clear and vigorous, of relation to a superior and Supreme Being.

It will be observed that, as in organic development, so in mental development: man passes beyond the limits at which animals stop in their mental evolution and attains a depth of perception into the universe and a range of relationship and correspondence unknown to them.

In the intellectual life, as in organic life, resemblances are at the bottom and not at the top, with this difference: that while the actions of the humbler forms of life are instinctive, man has comparatively few instincts and his actions are mainly intelligent. "No one," says Mr. Darwin, "supposes one of the lower animals reflects whence he comes or whither he goes." But on the principle of heredity, some being must have first conceived the thought, and the power to conceive such a thought must have been inherent.

Whether the difference between man and the lower animals is one of degree alone is really a matter of secondary importance. It is not the possession of the same bodily organs by which we determine the equality of man with the quadrumana or his superiority over them, but the use which is made of those organs. In like manner, it is not the sameness of mental faculties which determines equality or superiority, but the use of

those faculties. The question of the grade of life is not determined by asking, Is there perception, memory, thought, and love? but by asking, also, What is perceived, known, thought, and loved? Even in the sphere of morals the question of equality of life is not simply one of the existence of conscience but of range of the relation which conscience recognizes. Relationship and correspondence reveal the grade of life.

We conclude, therefore, from the necessity of acknowledging mental spontaneity, that to explain the phenomena and the fact of mental and moral life, we must assume, as in the case of organic evolution, either that the original germ or germs must have possessed the inherent, though latent, power to develop in time the highest powers of mental life; or that some germs had originally higher endowments of intellectual possibility than others; or that, at some point in the process of evolution, new power from some sufficient source was imparted to some living forms; for by the law of heredity, which is the first law of evolution, only that can be unfolded which has been enfolded, and the flower and fruit, even when that flower is thought and that fruit is mental action of a productive kind, can only complete what was contained in the seed.

The law of heredity is the conservative principle of evolution. It determines the direction of development. It determines the degree of power which a living being possesses to appropriate the substances which are about it and to use them for itself. It determines for a living being the possible range of its correspondence.

The value of this law, in its application to moral and religious phenomena, which we are subsequently to consider, lies in the fact that it reveals the necessity of assuming that a living being must be originally endowed, potentially at least, with all those faculties which are ultimately unfolded and active. Great as the changes may be in the course of development, yet, under this law, they are always changes of something which has previously existed and not the origination of something new.

As we are compelled to accept gravity, chemical affinity, and certain like qualities of material bodies as original properties, so we are obliged to accept life, consciousness, and moral sense as original possessions of certain beings, or as original gifts bestowed by the Creator. Consciousness and moral sensibility are facts which appear as life itself appears, and, however latent they may be in

the original forms of life to which they belong, they must inhere in those forms or they could never be awakened and evoked.

By this first law of evolution, therefore, we claim that a moral life having innate power of perceiving moral qualities, of forming moral judgments, and of impelling to moral acts must be accepted as an original form of life in the world. Physical ethics as a natural history of morals would be only a dream.

II. THE LAW OF VARIATION

THE second great law of evolution is that of variation. The mobility of matter and the plasticity of living forms within certain limits are apparent to the most casual observer.

There are two great facts to be observed in biological study; these are the fact of heredity and the fact of variation; the former is the conservative, and the latter the progressive, principle. This progressive principle is one of the peculiar properties of life. An inorganic body may increase in size by the external addition of substance like its own; but an organic body increases in size by taking external and foreign substance into itself and transforming it to suit its own chemical composition. There is in this fact a broad distinction to be noted between those forms of existence which we call inorganic and those which we call organic. In an inorganic body, that which is essential and in which identity inheres is matter. In an organic body, that which is essential and in

which the identity inheres is the life principle, whatever we may regard that to be. In an inorganic body, if the material is changed by increase or decrease, the essential thing itself is changed in like manner and is not what it was before. In the case of an organized body change of material is essential to its continuance, and an increase or decrease of material, though it may add to or detract from vital power within certain limits, does not change the essential nature of the being, and the constant change of material leaves the being the same amid all mutations.

That is to say (not that we know anything about life apart from a material organism), a broad distinction between an inorganic and an organic body, or a dead and a living object, consists in the fact that in one case change of material is impossible with the continuance of sameness, and in the other change of material is constantly demanded.

That a stone may continue the same, a state of repose, in which the cohesive force which binds the particles together remains unbroken, is demanded. A stone whose particles lose their hold one of another and pass away would cease to be a stone. But

that a living animal may continue the same, constant activity and continual change of material is essential, and the cessation of change would be death. In the one case identity, and therefore the real substance of being, lies in the matter; in the other case identity, and therefore the real essence of being, lies in that mysterious factor and force which abides during the continual flux of matter, and under whose magic touch matter assumes its transient forms. In the living organism, from the quickened ovum to the completed, mature, adult form, through all mutations, there is a unity unbroken and unimpaired.

The fact that this living principle, power, or essence abides amid changing material forms makes the fact and the law of variation possible; and the tendency of all living things to vary is the fundamental fact upon which the superstructure of evolution rests.

The fact of variation is patent; the cause of variation is commonly concealed. "Our ignorance of the laws of variation," says Mr. Darwin, "is profound. Not in one case out of a hundred can we pretend to assign any reason why this or that part has varied."¹ Some prenatal changes can be accounted for

¹ *Origin of Species*, p. 131.

by the mental and physical condition of the mother during pregnancy. An extraordinary sight, a sudden and violent shock, a peculiar physical state may leave a permanent impression upon the offspring, but such changes belong to those conditions which are temporary and transient. Some postnatal changes can be accounted for by changed conditions of life, but, although such changes are sometimes definite and repeated in the line of descent, yet, as Mr. Darwin observes, "Changed conditions generally induce mere fluctuating variability."

Mr. Spencer ascribes the origin of variation to change of function. He says: "We must say that in all cases adaptive change of function is the primary and everlasting cause of that change of structure which constitutes variation; and that the variation which appears to be spontaneous is derivative and secondary."¹

This theory of the origin of variation gives no explanation, however, of the origin of those changes which are prenatal, and which precede any functional use of the organ in which they occur. There is great truth in the remark of the botanist Maudin, that "when species vary, they do so in virtue of an intrinsic and innate property."

¹ *Biology*, p. 272.

Where variation is ascribed to the action of external stimulus, there must be recognized the internal susceptibility to the action of that stimulus. There must be an internal susceptibility to the impact of light before light as an external agent would produce anything like an eye. Where variation is ascribed to the functional activity of any part, there must be recognized the innate want of some external object and the internal impulse reaching out after such an object, before anything like a hand would be formed and perfected. Every organ of an animal organism is an index either of some relation of the animal to the external world, or of the relation of some parts of the internal structure to each other in the animal economy. The inner nature of a living animal, rather than its environment, determines the nature and line of its changes.

Bichat, in his interesting though not recent work on "Life and Death," observes that "The vegetable exists within itself, having no relation to what surrounds it except as to nutrition. In addition to this, the animal has an external life which establishes numerous relations with surrounding objects." Generation is not included in the above state-

ment, as that relates not to the individual but to the species. Fœtal life, according to Bichat, is vegetative and the motion of the fœtus is not voluntary but sympathetic. "Animal life is null in the fœtus, and begins at birth." But the organs of animal life are formed prior to birth and we are compelled to recognize an organizing force which is independent of the action of external stimuli, although the external stimuli may awaken the functional activity of the organs of sense perception.

Perty makes a similar statement: The sense of touch and taste act already before birth. The sense of sight, hearing, and smell act first after entrance into the world. "Tast und Geschmacksinn wirken schon vor der Geburt. Sie Hör-und-Riechsinn funktionieren erst nach dem Eintritt in die Welt."¹

Perty also says: "The wonderful machinery of the organisms is built up according to laws which lie without and above the individual consciousness and in possession of which the awakened consciousness finds itself."

Whether we hold the doctrine of animism and regard the soul of an animal as the living and formative principle, or affirm with Perty that the soul stands in a casual union with

¹ *Anthropologie*, p. 356.

the organism, and both act on each other, their relation being not absolute but relative, and together they build up a unity (*ein Einheit*), without being identical, or whether we hold that their actions are relative and harmonious without any attempt at explaining their union, we must in any case recognize the fact that the primal source and cause of variation must be sought for in the living organism, and its line must be determined by the nature of the living entity. The relation and effect of environment will be considered later in our discussion. The course of development may be determined by comparing one of the highest animals with one of the lowest, or by tracing the course of a single animal during its organic growth.

“In an individual development,” says Mr. Spencer, “we have compressed into a comparatively infinitesimal space, a series of metamorphoses equally vast with those which the hypothesis of evolution assumes to have taken place during those immeasurable epochs that the earth’s crust tells us of.”

Accepting the above statement as scientifically correct, we can by comparison of one of the lowest forms of life with one of the highest forms, or by comparison of the earliest form of one of the highest animals with its

mature form, discover the line of development and learn something of its laws and its limitations.

A brief outline of the development of an ovum of a bird, which is most easily studied and with whose history I am most familiar, will illustrate the course of physical and organic evolution. If from a number of eggs in process of incubation, one be taken day after day and cut in thin layers and examined under the microscope, the course of its evolution can be definitely traced. Beginning at the nucleus or germinal spot of the egg, a process of division, called segmentation, takes place by which the central portion of the egg is divided into a number of cells, and these multiply into all the cells of the future animal. The cells which lie at the periphery are larger than the cells in the center, and the outer and inner cells form two layers of blastoderm. Soon a third layer makes its appearance between the other two, and these three germinal layers, called epiblast, mesoblast, and hypoblast, form the fundamental basis of all the parts of the animal body. These three layers are formed in the embryo of all vertebrate and most invertebrate animals.

From the epiblast or outer layer of cells are

derived the epidermis or outer covering of the body, the central nervous system, and the principal portion of the organs of special sense. From the mesoblast, or central layer of cells, are derived the bones of support, the skeletal muscles, the vascular system, and the connective tissues of all parts of the body. From the hypoblast, or innermost layer of cells, is formed the epithelial lining of the alimentary tract and its glands, with the exception of the external openings, such as the mouth, which are lined by the epithelium of the epiblast. The microscopical study of a bird in process of growth during the period of incubation reveals, also, the formation of special organs. For example, the brain develops out of the front part of the medullary substance of the neural canal. The heart with its muscular walls develops out of the splanchnic mesoblast. The lungs are at first buds or processes from the primitive œsophagus. The liver and other internal organs are formed in a similar manner. Special organs of sense, as the eye, for example, are formed by the expansion of elements which grow out of the central nervous system or by the involution of superficial epiblast. This brief history will illustrate both the development of an individual and the course of organic evolution.

Variation consists first of all in the specialization of functions. In the lowest forms of life the entire mass of protoplasm performs all the vital functions. An amœba moves, feeds, feels, and reproduces its kind. An amœba does all this in its totality without separate sexes and without special organs. A common polyp, which is sack-shaped and without special organs of sense, admits of being turned inside out so that the skin becomes stomach and the stomach becomes skin and each begins to do the work of the other, so that respiration and digestion are still carried on. In like manner, a quickened ovum of a vertebrate animal is a single protoplasmic cell which moves, feeds, and produces cells by a process of segmentation; these cells, however, do not separate into individuals, as in the case of an amœba, but continue in an individual form.

The history of the development of a vertebrate animal from its original germ reveals the fact that the organic difference between an amœba, which is an undifferentiated mass of protoplasm, and one of the higher orders of animal life consists in the differentiation of the protoplasm into separate parts having special functions and in the formation of organs of sense perception which enlarge the

relations of the organism and accompany and aid the development of a higher and a larger grade of life. Two factors may unite to produce these changes, namely: the inherent nature of the organism and the nature of the conditions under which it develops. The former factor is the much more important of the two. This fact is apparent as the following reasons indicate. Similar variations arise under dissimilar conditions and dissimilar variations arise under conditions which appear to be uniform. Furthermore, changes like the formation of organs of special sense which bear no direct relation to the vegetative and foetal life of the embryo take place before the living being is brought into relation with the environment within which the organs of special sense discharge their functions.

Variation, in the second place, is according to the law of adaptation. That is to say, organs are formed which bear relation to the attainment of the food demanded to maintain life, or to the propagation of the species, or to the completion of the most perfect correspondence of the individuals of the species with their environment.

“Whatever parts of the structure of the common progenitor or of its early descend-

ants became variable, variations of this part would, it is highly probable, be taken advantage of by natural and sexual selection in order to fit the several species to their several species in the economy of nature, and likewise to fit the two sexes of the same species to each other."

According to the conception of the above statement, natural selection, acting solely by accumulating slight, successive, favorable variations, and that struggle for existence which conduces to the preservation of profitable deviations of structure or instinct, would secure from the primary form these changes, which mark the most perfect specimen derived from it.

But that scientific explanation which consists in assigning a phenomenon to its causes must admit the fact that the preservation and the perfecting of a profitable variation by the action of natural and sexual selection and by the law of the survival of the fittest does not account for the origin of the variation which must be ascribed to chance, which is contrary to a theory which would establish law; or else it must be ascribed to the action of that factor, that vital force, which inheres in the animal and belongs to it and not to its environment. Selection only shows the preservation of useful qualities.

We find, as we trace variation along the line of descent, that there are two kinds of variation, definite and indefinite. Definite variation consists of those changes which are transmitted from one generation to another and become fixed because they are of some value to the species. Indefinite variation consists of those slight changes of form, size, color, etc., which may or may not be transmitted, because they are of no value to the species.

Variations are not a matter of chance, however spontaneous their origin may seem to be; they are not a matter of indifference moving now in one direction now in another, now to the advantage of the individual and now to the disadvantage; but, if preserved, they have a meaning; they are not indefinite but according to a purpose. "A whale," says Professor Huxley, "does not tend to vary in the direction of producing feathers, nor does a bird in the direction of producing whalebone." The tendency to vary is not along chance lines but along purposeful ones.

Variations which are indefinite and indifferent, of no material advantage, are fluctuating and are not necessarily transmitted in any permanent form. Variations which are disadvantageous to the individual or to the

race are not transmitted, at least not to any great degree. The monstrosities which one may see preserved in a medical museum do not live to propagate themselves. Nature cuts short the life of such abnormal and unprofitable variations. Chance variations do not get repeated and perpetuated. Only such variations as are in some way beneficial remain.

That organic development which produces the most perfect specimens of animal life consists in the specialization of vital functions and in the establishment of relations of correspondence with other forms of life. In like manner superorganic evolution proceeds along the line of the multiplication of individuals having peculiar qualities and by combining them together in a social body. The lowest form of animal life which multiplies by division bears no definite relation to any other animal existence and forms no society. The simplest society is that formed by the union of two sexes which are drawn together by sexual instinct, but whose union has no permanency and whose offspring receive no care from their parents. Such a union simply foreshadows the more abiding forms of social life.

The most perfect forms of organization

which are to be found in the lower ranks of animal life are those in which a single individual develops into a family or a community whose members are not alike but unlike, and perform special offices not by choice but by preëstablished fitness therefor. An adult queen wasp evolves into a multitude of individuals unlike each other, and severally adapted to certain active functions which have a relation not primarily to the life of the individual, but to the life of the complex social body. The organization of a community of bees is evolved from a queen bee, and the individual members of the organization, drones and workers, are constituted with reference to the preservation of the life of the community, and to the propagation of similar communities. The workers do nothing but collect honey, secrete wax, and make cells for the coming brood of young; the drones do nothing more than impregnate; the queen does nothing but deposit eggs; thus all the parts work for the maintenance of the whole. The difference between such a society and an organism consists in the fact that in an organism the different parts perform their functions mechanically without any volition, while in such a society the members act instinctively,

under will governed by impulse, without definite apprehension of the end to be attained. In such an insect society, however, as well as in an animal organism, the *vita propria* of each part is subordinated to the life of the whole, and care for the whole precedes that for particular existence. The individual is even sacrificed for the benefit of the whole. When the drones have become useless they are stung to death. Two queens in the hive are compelled to fight with each other until one of them loses her life.

In higher forms of superorganic evolution the volitional, rational, and moral elements become more prominent and play an important part. Birds of the same species congregate together, pair, and rear families. Gregarious mammals associate for mutual defense against enemies and for mutual coöperation in securing food.

Among men, especially where the rational and moral faculties control action, superorganic evolution obtains its highest form. Throughout all forms of social organization, evolution, and development, a measure of perfection takes place by the instinctive or intelligent and volitional adjustment of individuals to each other and to realities in.

their environment with which correspondence is maintained.

The law of variation in all such cases not only tends to produce change but also to set a limit to change. The organic variations which become perpetuated and permanent are such as perfect the individual life of the animal or such as bring it into just and helpful correspondence with its environment and, except perhaps in the matter of color, etc., which cannot now be considered, all variations spring primarily from within and are conditioned by environment and completed by the best possible correspondence with that environment. Superorganic variations obey the same law.

Mental evolution proceeds along a line that is parallel and coëxtensive with the physical evolution of animal life. That is to say, mental development is always found to be connected with a certain definite development of the nervous system, and mental activity, at least so far as we now know it, is always connected with an organization which, by means of central organs from which proceeds voluntary or spontaneous action, and by means of peripheral nerve cells which respond to external stimuli, establishes relations with the external world.

As Wundt well says: "Psychic development proceeds only upon the basis of a physical manifestation of life."¹ This is apparent from the fact that psychology with all her investigations has always found psychic and physical activity joined together.

As we advance from the low grades of protoplasmic life through the various forms of invertebrate and vertebrate animals, we find an increasing complexity of nervous organization, culminating at last in a nervous system in which the mass of the brain greatly preponderates over the mass of nerve substance contained in the spinal cord and nerves. That is to say, the nervous substance which is at first undifferentiated and then comparatively fairly distributed through the system comes at last to be mainly concentrated in a single organ composed of many parts.

A complete nervous system consists of an external organ or organs susceptible to external stimuli; sensory nerves which convey a sensation to the brain, which receives impressions from without, and also generates actions from within; and motor nerves which act reflexly in response to an external stimulus, and volitionally in obedience to spon-

¹ *Grundzüge der Physiologischen Psychologie*, vol. ii, p. 450.

taneous action of the brain. In the lowest forms of nervous organization a peripheral sensory cell is probably susceptible to the action of stimuli of many kinds; but in that development which consists of the differentiation and specialization of organic function certain cells become susceptible only to certain stimuli, and in like manner certain internal cells become the center of reflex and volitional action. As in the process of development there comes to be a special organ of vision and a special organ of hearing, and nerve cells which respond to the action of heat and cells which respond to the action of cold, so there comes to be a specialization of cerebral functions, which, to a degree, has been definitely determined. This accounts for the fact noted by Reich, that in invertebrate animals where brain and spinal cord are wanting there is evidently a conscious as well as an unconscious activity; for in such animals mental functions have not been, at least perceptibly, localized. In vertebrate animals, if the brain is removed, the power of volition and of automatic action is lost, although in some cases the power of reflex action remains.

Consciousness and volition may be said to be found in connection with certain nervous

elements, which, in the lower forms of life, are present in the undifferentiated mass of protoplasm, but which in the higher forms of life are present only in certain organs.

But although mental life is connected with a nervous organization, it does not depend wholly upon the size of the brain, but depends partly upon the size of the brain, especially in proportion to the size of the body; partly on the quality and structure of the brain, the cerebral convolutions being more numerous where great mental power exists; partly upon the blood supply; and partly upon the peculiar vitality of the individual being to which the brain belongs. In animals, intelligence depends much upon this latter quality, as shown in the superior intelligence of an animal so small and apparently insignificant as an ant. In the case of men, also, intellectual power depends upon other things than size of brain alone. The brain of Cuvier weighed sixty-four ounces, and the average human brain weighs forty-eight ounces; but the intellectual power of such a man as Cuvier is more than one third greater than the intellectual power of an average human being. Mr. Bain suggests that "there would be no exaggeration in saying that while the size of the brain increases

in arithmetical proportion, intellectual range increases in geometrical proportion.”

This rule, of course, must be applied in each case to animals of the same grade and kind, or the elephant, whose brain weighs from eight to ten pounds, would be transcendently great in intellectual range and power. Milne Edwards suggests that the various kinds of mental labor originate in the various kinds of nervous elements constituting the brain, and that the pyramidal and fusiform cells may have something to do in determining the amount and quality of labor which a brain may perform.

These observations are made, not for the purpose of introducing subjects which pertain to physiological psychology, but simply for the purpose of indicating that we have no material measure by which to estimate mental power, and that in the methods of its actions it transcends physical mechanics. We cannot agree with those who make a physiological condition the sole source and cause of mental life. We would not say that the loss of his tool, though it utterly disables an engraver, is the loss of his own skill as well. The workman is always greater than his tool, and is, in reality, the maker of his tool. We would not say that the loss

of an eye, though it destroys vision, is evidence that nothing but the eye and the action of the optic nerve under the stimulus of light enters into vision; for vision is manifestly something more than mere nerve commotion. In like manner, in addition to the chemical elements which enter into the composition of any organ of mental action there is an element which is not chemical, and which simply manifests itself to us through this nervous organization. The reality of an entity whose forms of manifestation are consciousness and volition is as manifest as any reality with which we are familiar, and in our own personal experience, by virtue of consciousness, the reality of such an entity is the last thing which can be doubted, if indeed any man can get back of Descartes' famous aphorism, "Cogito, ergo sum" -- "I think, therefore I am." There is a reality which manifests itself through, and in connection with, a certain nervous organization. I do not deem it necessary to attempt any complete definition of this reality or to assert any particular philosophy of the real essence of mind. But if it were a necessity to choose between the view which regards all mental life as the product of material organization and animism, or the

view that the psychic element is the organizing, formative, and, so far as continuance of its being is concerned, the abiding element, I should choose the latter position; for the evidence in its favor seems to me to be great indeed. I agree with Perty when he says: "One would scarcely err if he should designate the soul as the life principle of the body." And Wundt says: "We are compelled to admit that the physical development is not the cause, but much more the effect, of psychical development."

And Lotze expresses undoubted truth when he says: "We cannot make mind equivalent to the infinitive *to think*, but feel that it must be that which thinks; the essence of things cannot be either existence or activity; it must be that which exists and that which acts. Thinking means nothing, if it is not the thinking of a thinker; acting and working mean nothing, if, in endeavoring to conceive them, we leave out the conception of a subject distinguishable from them from which they proceed."

The development of mind, therefore, like the development of body, must be determined by the study of its faculties and their action and attainments. In the lowest forms of life, as an amœba, for example, where

action is automatic, we have a certain power of will, that is to say, of action from within, with power of choice within very narrow limits. The lowest forces of this mental activity we denominate instinct. We have really only two ways of determining mental action. Our own consciousness reveals to us the nature and activity of mental life, and our observation leads us to ascribe to other men and to animals of all grades a mental source of those actions which proceed from such a source in ourselves.

Romanes, in his work on *Mental Evolution in Animals*, classifies animals in the line of mental progression as follows: —

1. “Mollusca learn by experience;” which is equivalent to saying that they begin in instinctive action, and through experience become, to a very limited degree, intelligent in their action.

2. “Insects and spiders recognize offspring;” which is equivalent to saying that they recognize certain relations and the dependence of one thing on another.

3. “Fishes make mental association of objects by their similarity;” that is, in them memory and judgment come into active exercise.

4. “Reptiles recognize persons.”

5. "Hymenoptera, as bees and ants, communicate ideas."

6. "Birds recognize pictorial representations and understand words."

7. "Rodents, such as rats and foxes, understand mechanisms;" which indicates some appreciation of cause and effect.

8. "Monkeys and elephants learn to use tools;" which also requires more perception of cause and effect, means and end.

9. "Anthropoid apes and dogs have indefinite morality."

This classification, although it differs in distinctness of outline from the actual in nature, where sharp lines are seldom drawn, coincides with the fact that mental evolution is in the direction of larger life, increased self-consciousness, enlarged perceptions of relations, a sense of what is right in those relations, and greater and more perfect correspondence with a larger environment.

The first forms of mental action we term instinct. We cannot put ourselves in the place of an animal and we are compelled to judge of the inner workings of its nature from those things which fall under our observation. It seems to me that Reich has expressed the truth of the matter when he says: "Instinct is not the result of bodily

organization, nor of mechanical action of the brain, but the self-activity of the individual springing out of its inner being and character.”¹ Eduard von Hartmann says: “Instinct ist zweckmassiges Handeln ohne Bewusstsein des Zwecks.” Of such purposeful action without consciousness of the purpose, the bird’s nest, the spider’s web, the ant-lion’s pitfall, and the ingenious beehive, at least when made for the first time, are evidences.

Instinct is that mental impulse which flows from the innermost nature of a sentient being leading to action of a definite kind, although the relation of the being itself to the means used may not be apprehended, nor the end to be attained consciously known.

The order of evolution is sufficiently plain, although the stages of the processes cannot be definitely located and marked. As we follow the line of mental development in animals we find that instinctive action is succeeded by rational action. Rational action is action in the clear light of knowledge of the relation of the subject to its object, and of the means used to the end to be attained. In the process of mental evolution the mind comes to distinguish between the body and the object which is remote from the body,

¹ *Anthropologie*, p. 140.

between the sensation and the object which produces sensation, and, finally, between the sensation and the purely intellectual apprehension of the sensation, or between the mind itself and its changing moods and acts. An action which in some animals is instinctive in others may become intelligent, in that they are conscious of the cause and nature of the act and of its ends. An act becomes rational in that the actor knows why he acts as he does and connects cause and effect.

Rational action is succeeded by moral action in that the good or bad effect of an act upon the actor himself or upon others is clearly apprehended. An act which in some of the lower orders of life is simply instinctive may become a rational and moral act in the highest order of animal life.

Moral development depends primarily upon innate character.

The same act may appear to the mind to be good or bad according to the circumstances under which it is committed, and that not because it affects the bodily organs of sense perception differently, but by its appeal to the inner consciousness of its own nature and relationships, by which it apprehends other relationships also and judges of the moral quality of an act.

On the other hand, knowledge, and, consequently, mental and moral development, cannot surpass the bounds of the objects which stand in relation to the mind. These objects may be dimly perceived, imperfectly apprehended, and erroneously classified, but they must be there to be known at all. As Cousin says: "La spontanéité donne la vérité; la réflexion produit la science; l'une fournit une base large et solide aux développements de l'humanité; l'autre imprime à ces développements leur forme la plus parfaite; l'erreur vient la réflexion." That is to say, that which is perceived is real. The mental judgment or combination of things perceived may be erroneous.

Imagination may combine things unknown into new forms and may conceive of a hundred-handed Briareus, or imagination may extend things known indefinitely and may form some notion of infinite space or time; but imagination can produce no absolutely new thing. This fact all works of fiction, all dramas, poems, and works of art requiring vivid and extended power of imagination prove, and in proving this they testify to the present limits of mental evolution. Even speculative philosophy in its efforts to solve the problem of existence

cannot pass beyond the limits of the conception of matter or mind, or force or will, conscious or unconscious, as the essence and source, the beginning and the end of all things.

The value of this law of variability in its application to moral and religious phenomena lies in the fact that all mental, and, consequently, also, all social evolution consists in the perception of real beings, in the apprehension of real relations, and in the adaptation of individuals to those relations. Social evolution is determined by the combined action of the impulses, desires, and powers of individual men, modified and directed by their relations to other beings and to other men.

There are, therefore, certain limitations to social development. There is what may be termed functional limitation. We may say that it is a law of sentient nature that all acts are to express some inherent power, or to gratify some inward want. No food would be produced or clothing wrought or works of beauty formed or acts of worship offered, if they did not express or satisfy some inward want of man.

Now where division of labor reaches the limit of the native productive power of the members of society, it is apparent that the

limit of the division of labor and products produced has reached a natural limitation. We cannot define the boundary, but we are certain of this functional limitation to social evolution. There is, also, adaptive limitation. When each individual is adjusted to the ends of society in his relations to it, then there can be no further progress.

In the matter of the relation of the sexes, society has progressed by the perception of the true relation of the sexes to each other, in their relation to society as a whole, and not as determined simply by sexual impulse. The perception also of the relation of parents to offspring, and of these to the race, and the consequent subjection of the individual to others,—is a fundamental condition of social advancement. That is to say, in the subjection of impulse to love, of passion to principle, of the one to the many, the human race progresses. In the matter of division of labor, also, the perception of the fitness of individuals for particular and definite functions, and the adjustment of each individual to the best good of the whole social body make a normal division of labor, including mercantile and governmental functions. In the sphere of religious feelings, acts, and forms of worship, I would say that so far as

there is real advancement resulting in higher, holier, and better life, it must, by all analogies with other forms of life, result from the perception of realities and the adjustment of human beings in true relation with these realities. We conclude, therefore, that by the law of variability, so far as human society has truly developed socially and religiously, three things have been established by such development: (*a*) a capacity or want in man which is met by this development; (*b*) some power in the forms of society and their products to satisfy human wants; (*c*) the reality of the environment and of the relations in that environment under which these social forms are developed. This fact, however, will be more apparent under the next law of evolution to the consideration of which we have now come.

III. THE LAW OF CORRESPONDENCE

THE third law of evolution is that of natural selection, or the survival of the fittest, or, as I prefer to designate it, the law of correspondence.

“To be,” says Lotze, “means to stand in relations.” “All organic beings,” says Mr. Darwin, “have been formed on two great laws — unity of type and the conditions of existence. In fact, the law of the conditions of existence is the higher law.”

“The broadest and most comprehensive definition of life,” says Mr. Spencer, “is the continuous adjustment of internal relations to external relations.”

According to these definitions, those living beings which come into the most perfect relation and the most complete correspondence with their proper environment succeed best and for the longest time in resisting the disintegrating and destructive forces which act upon them, and consequently persist throughout the natural limit of life in the individual

and survive in the species; while such as fail to come into perfect relation and complete correspondence with their proper environment fail to fulfill the limit of life in the individual and frequently disappear as a species.

This persistence and endurance of individuals and of species, viewed in respect of their relation to environment, is termed natural selection; and viewed in respect of their relation to other individuals of the same species and other species of the same genera is denominated the survival of the fittest. This law of the condition of life may be called the law of correspondence. Two important facts should be borne in mind in the investigation of the law of correspondence. The first fact is this: the being of things does not consist in their relation to other beings but is a simple and pure *somewhat* exclusive of its relations, but *what* it is forms the ground of its possible relations and it exists in relations. The second fact is this: the condition of existence must be distinguished from the cause of existence. "Many evolutionists confound condition with cause." We can conceive of a simple being remaining unchanged, and especially if it were isolated from relation to other beings;

but any change which takes place in an actual being requires a cause, and this cause may be capable of acting and of producing certain changes under certain conditions and yet be entirely distinct from those conditions. For example, the proximate cause of the motion of a ball in space is the blow of a bat held in the hands of a boy, but the condition of such a movement in space is a medium like air; a ball inclosed in a narrow space by stone walls could not describe the same arc. The nature of efficient causation is inexplicable. It cannot be shown accurately and satisfactorily in what way causation in general is produced or comes to pass. But on the other hand, it can be shown to our entire satisfaction what relations and what conditions between real beings must be given in order that an act of causation may take place. The primal origin of the vital principle in an egg by which a living bird is produced is inscrutable; but that the egg must be brooded over by the parent bird as the condition of the action of the vital principle and the development of a living bird is a matter of positive knowledge.

CONDITIONS OF LIFE

THIS third law of evolution, that of . correspondence, deals with the conditions of life. But these conditions reveal real beings, known by means of relations, and the reality of the being must be acknowledged and accepted as well as the reality of the relations. Molecules of matter must have some attraction for each other before cohesion is possible, and cohesion reveals this attraction. Substances must have some affinity for each other before there can be any chemical union and the union discloses this affinity ; living beings must have capacity of perceiving or power of giving to other beings, or there must be reciprocal impartation and reception, before there can be any true solid union between them ; and this union or attempted union reveals this capacity or power. That all living beings of which we know anything exist in relation, and that their development depends on appropriate correspondence in this relation,

is one of the best established facts of natural science. That is to say, correspondence with environment is essential to development and the survival of the fittest is the persistence and endurance of the best of its kind.

A universal struggle for life, natural selection, and the survival of the fittest is the very soul of Darwinian philosophy; and the conception of this theory is, according to Haeckel, the essential service which Darwin rendered to modern science.

A few examples will serve to illustrate the law of correspondence. The luxuriant flora of tropical countries, the magnificent vegetable growths of the temperate zones, and the stunted trees and shrubs of the arctic regions illustrate the relation of climate to vegetation. Seeds demand sunshine as well as soil as a condition of their vital development, beauty, and fruitfulness.

In the growth of a plant the constant action of the vital impulse causes the continued formation of its primal forms, which group themselves into branch and leaf, into bud and blossom, and the complete plant is a manifold combination of its first form. The particular form of the plant is determined by its immediate environment. In the case of trees, as any one who has noticed

the direction of their limbs in relation to the shape of the soil — a plain or a hillside — in which they stand, and to the sunshine, must have perceived, the growth is determined by the way they stand towards the entire plexus of surrounding actions. If the environment is equal and favorable, the tree unfolds itself in a symmetrical manner and through the grades of its metamorphosis attains ultimately to blossom and fruit, which completes the cycle of its individual life. And thus it comes to pass as a law in nature that “organic form is determined by the distribution of forces and the approach in every case towards an equilibrium of inner actions with outer actions.” All the movements of the plant follow upon stimuli; and the absence of knowledge and action from motive constitutes, in the opinion of Schopenhauer, the essential difference between plant life and animal life. Like the drop of water which falls to the ground, the stream which rushes to the ocean, the magnet which turns to the north pole, the crystal which suddenly takes form, the plant, though higher than these, is acted upon by an external force and moves blindly and without a conscious motive towards its destined end. The plant in its development,

however, reveals both its own nature and the nature of its habitat. One with very little botanical knowledge can readily tell whether any given plant belongs to the tropical or the temperate zone, whether it grows in the sea or on land, in marsh or on moor, in the meadow or on the mountain. It is a very significant fact that thus, in the lowest of living forms, we have not only a conditioned life but a life also which in its development reveals its own nature, publishes its correspondence, and makes its environment known. The fiber of the plant publishes the soil from which it springs, and the flower of the plant publishes the fact that it has turned toward the sun and been kissed by him.

“The distinctive character of animal life is movement following on motives. All animals, even the lowest, know objects, and their knowledge determines their movements as motive.” This motive may be a very blind one, like the instinctive craving of hunger which in the case of the young, just born, craves food without distinct knowledge as to the means of attaining it, but with a power which leads to this attainment. The life of all animals, like that of plants, is a conditioned one, and both the continuance

and the completion of the life are conditioned upon correspondence with its proper environment.

The young sponge, by means of little lashes, swims along and feeds and finally settles down and attaches itself to a rock and, by means of cilia which wave to and fro in its cells, takes in and drives out the water which bears it food.

The young of jellyfish, which are dropped as minute globules of jelly from beneath the umbrella of the parent, swim through the sea by means of cilia and, if they are so fortunate as to escape destruction, settle down finally upon a rock, where they remain and lead the life of a hydra, sometimes budding for years, until finally another race arrives, which returns to the class of wandering jellyfish.

When an oyster first comes out of the egg it remains for some time lying safe between the gills of its parent; by-and-by it is cast out and swims away by a number of lashes with which it is provided, and if it manages to escape from the hungry fish and crabs and sea-anemone, and becomes fixed fast to a rock or a bank of shells, it is placed in a condition to become a full-grown oyster; otherwise its life is cut short. In like manner, mussels

anchor themselves to the rock by means of threads thrown out from the body. Whelks, periwinkles, snails, and other soft-bodied animals are provided with shells which serve to protect them from foes while they maintain themselves in connection and correspondence with the means of life.

The octopus, in addition to its protective covering, is able to expel an inky fluid from a gland in its body, darkening the surrounding water and baffling its pursuer. For in the manifold forms of animal life in sea and on land some means of defense or protection against foes is provided, and free action in a greater or less space is sufficiently secured for obtaining the means of life; if these are wanting, the life is not developed. Among birds and beasts it will suffice to remark that the instinctive care exercised by birds over their eggs and the watchfulness of birds and beasts over their young are provisions of nature by which the young are to be protected and brought into correspondence with the means of maintaining life until they are able to maintain this correspondence for themselves. Yet with all this providence and protection afforded the young, only a limited number attain to that degree of correspondence which insures life. As Mr. Darwin says: "Of the

many individuals of any species which are periodically born, but a small number can survive.”

Mr. Spencer remarks: “It is a corollary from that primordial truth which, as we have seen, underlies all other truths, that whatever amount of power an organism expends in any shape is the correlate and equivalent of a power that was taken into it from without.” According to this recognized principle, only such individuals as come into receptive communication with the means of life can survive the destructive forces which are at work in the world and can build up a complete and perfect organization. The elder De Candolle and Lyell have shown at length and in a philosophical manner that all organic beings are exposed to severe competition. Birds live largely upon the seeds of plants, the eggs of birds are destroyed by other birds and by beasts, and strong animals prey upon the weak. There are enemies whose presence makes certain kinds of life in a given area impossible.

Neither horses nor cattle nor dogs run wild in Paraguay, owing, it seems, to the existence of certain parasites whose presence upon these animals destroys life. Absence of injurious conditions as well as presence

of healthful condition is necessary to insure life.

The struggle for existence, however, is most severe between members of the same species, and this struggle is largely for the sake of securing the means of support, or the perpetuation of the species. "In Australia, the imported hive-bee is rapidly exterminating the small, stingless, native bee." We find that favorable climate, absence of destructive enemies, plenty of food, etc., are necessary conditions of continued and improved life. In my opinion, however, undue emphasis has, of late, been laid on the conflict of animals with each other. This conflict is rather incidental than essential. While the struggle for existence is often a struggle against enemies, it is more frequently a struggle for the purpose of coming into correspondence with the means of life. A plant may be said to struggle against drouth, but it is more scientific to say that its continued growth depends upon a sufficient supply of moisture, and so far as the plant may be said to struggle at all, it is to find moisture. We may say, it is true, that two animals, in time of scarcity, may struggle with each other for the scanty food to be found; yet it is not, properly speaking, the struggle but the ac-

quisition of a sufficient supply of food which insures continuance of life. Struggle for life against foes or rivals is an incident, the need of food a universal and an essential fact. Hence correspondence is a better term than either natural selection or the survival of the fittest. And animals unite with those of the same species to secure food. Among animals of the same species coöperation for mutual support is common.

This law of correspondence acts exclusively by preserving such forms of life as tend more and more to become improved in relation to their environment. "Natural selection implies only the preservation of such variations as arise and are beneficial to the being under its conditions of life."¹ "Man selects only for his own good, Nature only for that of the being which she tends."

"Sexual selection acts in a less rigorous manner than natural selection." Under the action of sexual selection there is generally on the part of the weaker a less numerous and weaker offspring, and the extermination of the weaker is a gradual process. Natural selection may produce the death of the less successful and feebler members of a species at all ages and hence produces ultimate effects

¹ Origin of Species, p. 63.

more rapidly than sexual selection. Natural selection is an eliminative process. "Though nature grants long periods of time for the work of natural selection, she does not grant an indefinite period ; for as all organic beings are striving to seize on each place in the economy of nature, if any one species does not become modified and improved in a corresponding degree with its competitors, it will be exterminated." ¹

We may say in a sense that the conditions of life include natural selection ; for the conditions of life determine whether this or that variety shall survive.

Special organs of sense show the same truth.

The effect of the habitual and attentive use of special organs, which is practically correspondence with environment intended to call into exercise such organs, illustrates the development which takes place under the law of correspondence. Touch could not be developed in a vacuum, even if life in a vacuum were possible. Sight and hearing are conditioned by light and motion of air.

The delicacy of touch — which according to E. H. Weber is greatest in the tip of the tongue, then in the volar side of the last

¹ *Origin of Species*, p. 80.

phalanx of the finger — and its capacity of increase are illustrated in the exceedingly delicate and discriminating power of touch acquired by the blind.

The whole history of vision shows both how the sense develops in accuracy and is modified by practiced mental judgment. “The different parts of an object as seen are primarily localized simply with reference to each other by means of local retinal signs and of muscular sensations produced by motions of the eyes.”¹ But the exercise of mental judgment in reference to these signs, and the sensations produced by a corresponding medium of light and environment of visible objects, gives at least knowledge of color, form, size, distance, and relation — a knowledge most accurate in those in whom the sense has been most carefully exercised.

In the matter of hearing, the difference between different persons is most marked. Admitting natural difference in the delicacy of the organ of hearing, yet the increase of this difference as the result of use of the organ is most manifest. Persons without practice, within the octaves from C to C³ distinguish a difference of from eight to sixteen vibrations as producing a distinct dif-

¹ Ladd, *Physiological Psychology*, p. 462.

ference in the sensation of pitch; but the trained musician can detect by ear a difference in quality between two notes of 400 and $400\frac{1}{2}$ vibrations per second.¹

Mental development depends upon voluntary attention to surrounding objects, apprehension of them, discrimination, classification, reflection; or, in other words, correspondence with environment and with other minds whose thoughts may awaken thoughts and feelings in reference to them.

Social development illustrates the same truth.

Social life, as has already been shown under the law of variability, progresses by the subordination of impulse to love, passion to principle, self to society, and such correspondence between the sexes and members of society as secures the greatest good to the highest number. "As the reasoning powers advance, and experience is gained, the more remote effects of certain lines of conduct on the character of the individual and on the general good are perceived: and then the self-regarding virtues, from coming within the scope of public opinion, receive praise and their opposites receive blame. The moral nature of man has reached the highest stand-

¹ Ladd, *Physiological Psychology*, p. 321.

ard as yet attained, partly through the advancement of the reasoning powers, and consequently of a just public opinion, but especially through the sympathies being rendered more tender and widely diffused through the effects of habit, example, instruction, and reflection.”¹ Whether we admit, which is not necessary, that Mr. Darwin has included all the factors of social and moral development here or not, his testimony adds weight to the statement that all social and moral advancement is conditioned upon a right apprehension of relation which social and moral beings sustain to each other and upon a correct correspondence in their relations. He himself says, also, “With the more civilized races, the conviction of the existence of an all-seeing Deity has had a potent influence on the advancement of morality.”²

This scientific doctrine of correspondence, of natural selection, and of the survival of the fittest illustrates the conditioned nature of all life with which we are familiar and the limitations placed around all living things by their conditions. If any living being fails to attain and to maintain correspondence with its appropriate environment, it dies. If any living being comes into imperfect and partial

¹ *Descent of Man*, p. 376.

² *Descent of Man*, L., p. 377.

correspondence with its environment, its life is imperfect and partial. If any living being comes into perfect and complete correspondence with its proper environment, its life is perfect of its kind. There are certain corollaries which may be deduced from these facts, which are of value in the application of this law to moral and religious phenomena. (a) The development of any living creature is a revelation of its inner and true nature, and also an evidence of the existence and the reality of the environment with which it corresponds. (b) The grade and degree of correspondence of any creature marks the grade and degree of life. (c) No development can take place without environment. There may be correspondence with a false environment or an insufficient one, but there can be no development outside of any and all corresponding environment. A vine may creep on the ground where it fails to find a true support, a fish may live for a short time in air, a man may set his love upon unworthy objects; but vine and fish and man have proper objects to support life, and no development takes place except as environment meets in some degree their wants, and no development can pass beyond actual correspondence.

We conclude, therefore, that an inward craving for correspondence and an effort to obtain such correspondence are evidences of the real and the related nature of any living being; and the satisfaction of this craving and the growth of the being to a higher form of life are evidences of the existence and the reality of that after which such living being craves and of the establishment of correspondence between them. And this conclusion constitutes the value of this law in relation to moral and religious phenomena.

SPENCER'S
THEORY OF RELIGION

SPENCER'S THEORY OF RELIGION

IN respect of physical organisms within the sphere of the animal kingdom, and social organizations within the sphere of purely human society, all evolutionists would most probably agree with the facts thus far cited, the principles propounded, and the corollaries deduced from them.

There is, however, in the case of the human race, and especially in its highest nations and most advanced classes, a department of quite distinct phenomena which many evolutionists overlook or leave unclassified and which some endeavor to explain upon the hypothesis of the extension and imaginative enlargement of social relations beyond the ordinary bounds of space and time. I refer to the phenomena of religious feelings, volitions, and actions. There are in the world religious and spiritual phenomena which are the expressions of feelings, thoughts, and volitions of men in at least a supposed relation to a Supreme Being who

transcends physical organisms and the powers of men. There are men who say at least that they hunger for communion with the living God; who cry out in words which are intended for no human ear; who render services for which they expect no reward from men, but a reward from One higher than man. There is an element in human nature which has been so supremely dominant in many men that it has led to fasting when the body craved food, to celibacy when passion prompted to marriage, and to separation from social relations when the heart longed for society. There is a force in the world and in the hearts of many men which has subjected all human passions to its sovereign sway. There is a principle in human life which combines men in religious organizations whose forms and fruits are as perennial as any other forms and fruits of social life, and whose expressions of vitality and power are full of significance. There is a factor and force in human society whose expression is altars, sacrifices, temples, prayers, songs, and manifold services. There is a factor and force in human life, which reveals itself in architecture and in art, in literature and in music. A scientific philosophy which undertakes to explain the phenomena of physical and

psychical life can no more ignore these phenomena than it can ignore the forms of governmental organization, the social relation of the sexes, the associations of animals of like nature, the cries of birds, and the solid habitations which many soft-bodied inhabitants of the sea secrete for their protection.

“The part of scientists,” says Topinard, “is to ascertain facts, to deduce from them laws, and to look at them calmly, without allowing ourselves to be carried away by our feelings.”¹

Religious phenomena, however, have been wholly overlooked or ignored by some evolutionists, left unclassified by some, and referred by others to the spheres of the social affections and the imagination. It is but recently that serious attempts have been made to carry scientific methods of investigation into the sphere of religious phenomena and to arrive at scientific and substantial conclusions. It is the purpose of this treatise to add something to this attempt.

“Spiritual powers,” says Mr. Darwin, “cannot be classified by the naturalist.”² But if spiritual powers and phenomena cannot be classified by the naturalist, it must be

¹ *Anthropology*, p. 534.

² *Descent of Man*, vol. i, p. 179.

because they evidently imply relations which transcend the limits of his classification.

Mr. Spencer says: "Religious ideas of one kind or another are almost universal. The diverse forms of religious beliefs which have existed and which still exist have all a basis in some ultimate fact. To suppose that these multiform conceptions should be one and all absolutely groundless discredits too profoundly that average human intelligence from which all our intelligences are inherited. An unbiased consideration of its general aspect forces us to conclude that religion, everywhere present as a weft running through the warp of human history, expresses some eternal fact."¹

A careful examination of Mr. Spencer's theory of the origin and growth of religion has failed to disclose to me any eternal fact upon which he bases religion. But as no man has excelled Mr. Spencer in an attempt to apply the principles of evolution to all the phenomena of organic and superorganic life, and as Mr. Spencer has undertaken to account for the origin and growth of religious feelings, acts, and institutions by ascribing them partly to the social nature of man and partly to the misinterpretation of common

¹ First Principles, pp. 13, 20.

phenomena, such as dreams and the like, I shall present an outline of his argument and a criticism of the same. I shall present this outline and the criticism for the following reasons: (*a*) Mr. Spencer has made the most elaborate attempt with which I am familiar to account for religious phenomena by a professed application to them of the principles of evolution; (*b*) the simple outline of his argument reveals the unsatisfactory nature of an attempt to base those phenomena which, as Mr. Spencer himself says, express "some eternal fact" upon a basis which is in all particulars temporal in its origin and which may be transient in its duration; and, finally, (*c*) a criticism of this one-sided evolution, that is to say, evolution without environment, will prepare the way for that scientific study of religious phenomena which accepts the truth of evolution; namely, that what is developed is an actual reality and that its development is conditioned upon an environment which is likewise a reality; that is to say, that evolution does not create but unfolds, and that the unfolding is conditioned upon correspondence with environment.

Mr. Spencer gives the following account of the origin and growth both of religious feelings and of religious institutions:—

The primitive man beholds every day a shadow, a visible but impalpable image of himself, which accompanies him everywhere. He comes by-and-by to the conception of a dual life, and to the belief in the existence of an invisible and impalpable image of his visible and palpable self. This conception is confirmed by the phenomena of dreams, of sleep and waking, of swoons and restoration, and becomes to the primitive man a simple and a satisfactory explanation of many things otherwise inexplicable.

The primitive man fails in a day's hunt and lies down at night weary and hungry. In his sleep he engages again in the chase; he pursues and captures game; he feasts and his desires are fulfilled; he wakes in the morning and behold, he is in the same place in which he lay down at night. The dreams, however, had all the vividness of reality. How can he account for these experiences, except by supposing that his shadowy self actually left the body, wandered through the forest, pursued and captured game, feasted upon the flesh, and then returned again to the body which it had left? Out of such dreams arises a clear conviction of a dual life and of the possibility of existence of the soul apart from the body. Following in the

same line, a belief in an existence after death and in a realm of spirits arises. Sleep is a state of unconsciousness, of bodily insensibility when the soul is absent, as in a dream, and from this state there is a resurrection. A severe blow on the head, a sudden fainting fit or a swoon will produce most of the visible phenomena of death; but the subject revives and comes back again to conscious life. What now is more natural than to conceive of death as a temporary existence of the soul in a separate state and of a possible return and revivification of the body? If the soul exists during temporary paralysis of the body, may it not exist when the body is indeed dead, and may it not also return at some future time and revivify and reinhabit the same body? The primitive man comes thus to believe in a disembodied, shadowy, spirit life, and to believe also in a future resurrection, which gives rise to the careful efforts found in so many places to preserve the body as long as possible. Dreams in which the dead seem to reappear to the living confirm this belief in a post-mortem state and a spiritual return. We may cite by way of example the case of the Peruvian Incas, "who believed in a universal resurrection not for glory or punishment but for a renewal

of this temporal life.” Some believed this post-mortem life to be semisubstantial, as is implied in the ascription to ghosts of organs of sense, and of acts requiring physical force. Some regard it as wholly incorporeal. For example, in the *Iliad*, Achilles, who has in vain tried to embrace Patroclus, cries out, “Alas, there is indeed, then, even in the dwellings of Hades a certain spirit and image, but there is no body at all.” We find among primitive nations conceptions of semisubstantial duplicates and conceptions of aëri-form and shadowy duplicates. “The second self, originally conceived as equally substantial with the first, grows step by step less substantial; now it is semisolid, now it is aëri-form, now it is ethereal. And this stage finally reached is one in which there ceases to be ascribed any of the properties by which we know existence; there remains only the assertion of an existence that is wholly undefined.”¹

The primitive conception of a future life is that it corresponds to the present one. The dead awake at night, say the Chinooks, and get up to search for food. Among many tribes, whose names need not be given, there is the custom of depositing near the grave,

¹ *Sociology*, p. 197.

or upon it or in it, clothing, implements, weapons, ornaments, and jewels. In some cases the life of animals, of slaves, of wives is sacrificed that they may accompany the dead.

The future life whose form resembles the life of the present resembles it also in its social relations, its castes, its sentiments, conduct, and morals.

“Thus the idea of death gets gradually marked off from the idea of suspended animation, and the distinction between the second life and the first grows decided. It diverges by becoming more unlike in its occupations; by having another kind of social order; by representing gratifications more remote from those of the senses; and by the higher standard of conduct it assumes.”¹

With this change in the conception of the future life, there is a change likewise in the conception of its place. The abode of the departed, from being a viewless one in the immediate vicinity of the former home and friends, is gradually removed to the adjacent forest, to the distant hills, to the mountain tops, to the heavens, and finally to a place unknown.

Out of this belief in the existence of de-

¹ *Sociology*, p. 215.

parted spirits and in another life arises the belief in supernatural beings. A surrounding world of spirits comes to be conceived of, and mountains, hills, forests, and the cool shades where pools of water lie become peopled with invisible inhabitants. These invisible spirits, to whose power no limits are known, become the supposed active agents in the production of physical phenomena. "Clouds that gather and presently vanish, shooting stars that appear and disappear, sudden darkenings of the water's surface by a breeze, animal metamorphoses, transmutation of substance, storms, earthquakes, eruptions, all become explicable." They are produced by spirits. In this same connection arises the belief in the mental origin of many diseases, in witchcraft and demoniacal possession. But if a malevolent spirit may afflict men, a benevolent spirit may bless, and hence comes a belief in inspiration, with its consequent power of proclaiming truth and of prophesying. Extraordinary power of mind is ascribed to spiritual agency; the poet invokes the muses; and all great and glorious thoughts come from a god.

In the imposition of hands, in the ordination of ministers by the Christian Church, in the words of the officiating bishop: "Receive

ye the Holy Ghost," in the faith of the Quakers in divine spiritual illumination and guidance, we behold a modern, modified form of primitive belief in supernatural agency and inspiration.

Out of this belief in spiritual power and agency arises the belief in sacred places and the practice of forms of worship. The living are silent and reverent in the place where the dead lie; offerings of food are brought to the cave in which the dead are buried, and the cave-temple becomes a holy place. The sheltering structure raised above the graves becomes the germ of the sacred building; the table upon which provision is laid for the dead becomes an altar; and the pile of turf or of undressed stone becomes a place of sacrifice.

At first, sacrifices consisted in provision for the spirit's journey on first departing this life. The animals slain were offered to the dead to appease their hunger and to propitiate them. The custom of bringing food on memorial days and the practice of offering part and of eating part gave rise to sacred times of sacrificial offering and to the custom of dividing the sacrifice between the dead and the living, burning part and eating part.

Because the bereaved oftentimes denied

themselves in order to furnish food to the dead, or fasted voluntarily to induce dreams in which they might commune with the departed, the custom of fasting as a religious observance arose. The eulogy of the dead, first delivered as a funeral rite, passed into praise of the dead, which was naturally followed by prayer to the dead. There are tribes who think themselves guarded by the spirits of their ancestors and deceased children and in every calamity and in every want they call upon them for aid.

From the belief that soul is in every part of the body arose the custom of preserving relics. From the belief that the soul may again enter the body arose the belief that the soul may dwell in an image, and hence the practice of image worship. From the belief that men's souls may enter animals and dwell in them arose the custom of animal worship. Snakes which are found in the house in which a man has died are supposed to be the departed in animal form. Bats found in caves where the dead have been placed are the embodied spirits of the deceased. "Bats and owls are winged spirits, and from them arise the traditional ideas of devils and angels."

Plants which like the white poppy (*Pa-*

paver somniferum), whose inspissated juice forms opium, or like the soma, whose juice intoxicates, or like tobacco, whose power as a nerve stimulant gave it in Peru the name of "the sacred herb," are supposed to owe their peculiar power to some spiritual agency, and from this belief the custom of plant worship arises.

Two other sources of plant worship are recognized. Tribes that have migrated from places that are characterized by particular plants or trees, unawares change the legend of emergence from them into the legend of descent from them. Hence the belief that such trees are their ancestors, and the regard for them as sacred. The other source of this worship is the custom of naming individuals from plants, which gives rise eventually to the conception of descent from plants. Plant worship, like the worship of idols and of animals, is an aberrant type of ancestor worship. And the worship of nature in general, the adoration of the sea or of the heaven above us is likewise a form of ancestor worship. There is another way of accounting for the origin of some gods, and that is by the idealizing of individual men. In primitive tribes, the man who excels in skill, the man who practices

medicine, and the man of power who rules are feared and held in reverence. It is an easy step from this reverence paid to them when living to adoration of them when they are dead. It comes to pass in course of time that the worship that is paid to men generally when deceased is finally paid to a few. "If the ghost in general is feared, still more feared will be the ghost of any one distinguished during life." Ellis says: "The Sandwich Islanders regarded the spirit of one of their ancient kings as a tutelary deity." The Greek god and the Fijian god everywhere appears as a powerful man; but the Greek god, says Mr. Spencer, "was derived from the personalization of natural objects and powers, and the Fijian gods have arisen by the apotheosis of men; and the two sets of gods created by these two contrary methods are substantially the same."

Such is the origin of all deities which men have worshiped, and of all religions which have influenced human life and conduct. "Egyptian gods lived and died." The mortality of Greek gods is implied in the legends respecting them. In the legend of Buddha the guide tells him that death is the final destiny of all flesh. "Gods and men, rich and poor alike, must die."

Abraham is a wanderer like other primitive men, and the famous covenant made between him and God is simply an agreement made between him and a prince of the land which he enters; and circumcision is the sign of the covenant which the prince imposes. The Hebrew word Elohim, translated God, is a term applied to powerful men. Adonai is used as indiscriminately as the English title lord. Shaddai is simply the Mighty One. And the lofty title, "King of kings and Lord of lords," is a description which implies that the Hebrew God is one of many, distinguished by a supremacy. How this harmonizes with the well-known Hebrew claim that their God is the only living God, and that besides him there is none else, Mr. Spencer does not say. But what he does say, in closing his argument, is as follows: "Behind the supernatural being of this order, as behind supernatural beings of all orders, we thus find that there has been in every case a human personality. Anything which transcends the ordinary the savage thinks of as supernatural or divine, a remarkable man among the rest. This remarkable man may be simply the remotest ancestor remembered as the founder of the tribe; he may be a chief famed for strength

and bravery; he may be a medicine man of great repute; he may be an inventor of something new; and then, instead of being a member of the tribe, he may be a superior stranger, bringing arts and knowledge, or he may be one of a superior race, gaining predominance by conquest. Being at first one or other of these, regarded with awe during his life, he is regarded with increased awe after his death, and the propitiation of his ghost, becoming greater than the propitiation of ghosts which are less feared, develops into an established worship. There is no exception then. Using the phrase 'ancestor worship' in its broadest sense as comprehending all worship of the dead, be they of the same blood or not, we conclude that ancestor worship is the root of every religion."¹

I have given an outline of Mr. Spencer's system because it is elaborate, comprehensive, and the work of a distinguished master in the application of the principles of evolution to social problems.

There are, however, several grave criticisms to be made upon this proposed philosophy of religion. The faults and the fallacies of the system are such as these: (a) It is unscientific in its method, being

¹ *Sociology*, p. 440.

in reality deductive rather than inductive. (b) It is unphilosophic; for it ignores the best known facts of the greatest religions. (c) It is unhistoric; for it ignores the process and the fact of moral advancement which has taken place under the influence of some religions. (d) It is sophistical; for it attempts to account for the existence and action of spiritual nature without any appropriate environment within which actual correspondence may exist. These criticisms of the systems will now be taken up at some length.

(a) This philosophy of religion is unscientific. It does not begin with religious systems as we now find them in the world, and by accurate analysis and careful research trace them back to their origin; but it assumes its own conclusion, namely, that all religions arise from ancestor worship, and then attempts, by the citation of certain customs and prevalent beliefs of barbarous tribes of the present time, and by a few citations from classical writers and a few references to one or two historical religions, to bring all the facts of the phenomena of past and present religious systems into conformity with the principle of ancestor worship. In this the system is not inductive,

but deductive, and worthy rather of the efforts of a schoolman of the middle ages than of the efforts of a scientific investigator and expounder of phenomena of the nineteenth century.

Mr. Spencer applies the process of his own thought to the religious development of primitive men, and assumes that they must run parallel and coincide. He says, "The phenomena exhibited during evolution cannot be placed in serial order." But there ought obviously to be sufficient of a series to show the outline of development and the connection of events. I have failed to find in this philosophy any connection between the assumed basis of all religion and those religious beliefs and practices which crown the religious life of man in time. Every shadow is cast by some substance. Every dream, however false its groupings of phenomena in relation of time and space, may be, has some corresponding reality in human experience which is reproduced in the dreams. There must be some reality in the experience of men in time to make belief in ghosts possible, however unreal ghosts may be. Moreover, the belief in the survival of human souls after death would neither prove nor disprove the existence of spiritual beings

with whom men may be in correspondence. Barbarous men of the present time, to whom Mr. Spencer refers as the best type of primitive man, have certain ideas of the future life which would naturally develop neither into the idea of an eternally existing Being, nor, ordinarily, into the idea of human immortality, which are two important factors in the highest religious beliefs of men. "Belief in ghosts and immortal spirits," says Sir John Lubbock, "is essentially distinct. Spirit is not recognized as immortal because it does not perish with the body. Belief in endless existence is confined to the highest races."¹ "Belief in a future life, but not an immortal existence," says Mr. Tylor, "is a doctrine of many nations."²

"Ask a negro," says Du Chaillu, "where is the spirit of his great-grandfather; he says he does not know; it is done. Ask him about the spirit of his brother who died yesterday; then he is full of fear and terror."

A belief in a temporary existence of the souls of deceased men accompanied with a belief in immortality would not develop naturally into the conception of a spirit realm in which the place and the power of the recently dead are unknown and but

¹ *Origin of Civilization*, pp. 138-245.

² *Primitive Culture*, ii, p. 19.

little thought of, and in which one Being, most unlike man in the purity of his passions and the greatness of his power, forms the chief object of faith and worship. The natural evolution of a faith based originally on sleep and waking, on dreams and visions of visitations of the departed and communion with them, would develop primarily into a belief in a realm peopled like this world and polytheistic so far as it is divine; and secondarily it would develop into the absence of faith in spirits and the spirit world as men develop mentally and acquire a scientific knowledge of the phenomena of sleep and dreams and death. Whereas, as a matter of fact, the religious development of the world is not towards polytheism, as it should be from Mr. Spencer's premises, but towards monotheism. And a second significant fact is that with the growth of knowledge and intellectual power men do not lose their faith in the reality of spiritual things, but, whatever may have been or may be the opinions of a few individuals, the great mass of men in the most civilized and cultured countries and communities have been deeply impressed with the abiding conviction of the existence of a Supreme Being and of a human rela-

tionship and accountability to Him. This constant conviction, this abiding belief must rest upon something deeper than a barbarian's conception of the temporary continuance of his deceased father's ghost, which is like the smoke from consuming wood that hovers for a little time over the wood of which it once formed a part, then soars far above it into the depths of the sky and vanishes away. The belief in God rests upon and represents some deeper and more eternal fact.

(*b*) In the second place, Mr. Spencer's theory is unphilosophic. It is not simply unscientific in its method, but also unphilosophic in its matter; for, while professing to trace effects to their cause, it overlooks a large class of phenomena which should be included in Mr. Spencer's summary and explained by his philosophy. Practically, and as a matter of fact, he overlooks the most prominent facts of the best known, the most widespread, and the most influential religions of the world. It is at least remarkable that the beliefs and practices of the native races of the Pacific coast, of the inhabitants of South America at the time of its discovery, and of the tribes of Africa and Australia should be dwelt upon at great

length; and the religions of India, Persia, Palestine, and modern Europe should be either wholly ignored or simply referred to by a quotation or two, while the underlying principles of their faith and practice are left wholly unnoticed. If it be replied that the races of Africa represent primitive man, I answer that that is a pure assumption. Mr. Spencer himself admits that retrogression may have been as common in the world as progression, and in point of time the great historic nations lie nearer to primitive man than do the barbarous tribes of the nineteenth century. Ancient Egypt is the land of whose early history we know most, and whose inhabitants are for us as near the primitive man as are the inhabitants of any land beneath the sun. Egypt was long since renowned for her discoveries in science and in art, and was at one time the university of the world. It was there Moses and Pythagoras, Herodotus and Plato, lawgivers and philosophers, went to school. "The Egyptians," says Herodotus, "are of all men most excessively attentive to the worship of the gods." With them science and literature were branches of theology, and art labored to glorify the gods. The *form* of Egyptian worship is preserved for us and consisted

essentially in the worship of nature and animal life. But the inner meaning, the spirit of worship, is a matter about which there are speculations and differences of opinions. Tiele says: "The religion of Egypt was an organized animism. It was the worship of spirit in its incarnations in the manifold forms of life. Its mythology reproduces in varying forms two leading ideas: that of creation by the supreme uncreated God, and that of the triumph of light over darkness, of life over death." Some writers upon the subject of Egyptology claim that those who understood the meaning of their symbols believed in one Supreme God. Wilkinson says: "The priests were aware of the nature of their gods, and all those who understood the mysteries of the religion looked upon the Divinity as a sole and undivided Being." Rawlinson says: "The Egyptians believed in one self-existent, supreme God." Other gods were simply personified attributes. They believed in the transmigration of souls, in the final destruction of the incorrigibly wicked, and in the eternal life of the righteous. This religion of incarnated spirit, of transmigration of souls, of final judgment, of the destruction of the wicked, and of the immortality of the righteous in union with the

divine Being, notwithstanding the similarity of animal worship and the return of spirits into bodily forms, far transcends in its philosophy the partially known beliefs of barbarous tribes, whose faith Mr. Spencer regards as the basis of all faith.

Brahmanism cannot be traced to any individual as its founder, but it is the religion of a caste, the Brahmans. It is the most ancient and the most dominant religion of India and can be traced backwards for more than three thousand years.

Brahmanism teaches that there is one self-existent spirit, the source and support of all things that exist; men, animals, plants, and stones may pass through innumerable existences, but they all end by absorption or rather reabsorption into their primal source. The Brahmans say that worship *before* images, not *to* images, is practiced in condescension to weaker sects. But they also say, "Who is the God to whom we shall offer our sacrifice? He who gives life; he who gives strength; whose blessing all the bright gods desire; he who governs all, man and beast; he through whom the sky is bright and the earth firm; he to whom heaven and earth, standing firm by his will, look up trembling inwardly; he who is the only life of the

bright gods ; he who is God above all gods.”¹ A system of philosophy which professes to account scientifically for the rise of all religions ought not to overlook an ancient, powerful, and wide-spread religion like Brahmanism, whose definite philosophy makes it far more intelligible than are the traditions and superstitions of barbarous tribes. But this religion stands at the opposite pole of thought from Mr. Spencer's system. That claims that religion is the projection of human life and relations into unknown regions of space and time ; this asserts that all things in time and space proceed from one eternal Spirit, of whom the waters and the light are but the garment, and who is the only light of all the bright gods, their life not apart from them only but in them. Brahmanism in its profoundest philosophy and deepest spirit is not polytheistic but monotheistic, and is a worship not of human ancestry deified, but of a divine center and source of life manifested in the works of creation.

Buddhism seems in its forms of religious life to be the Roman Catholicism of Brahmanism, but in its spirit it is rather the Protestantism of Brahmanism. Brahmanism lays stress on meditation and seeks by

¹ Rig Veda — quoted in Johnson's "Oriental Religions," p. 117, India.

withdrawal from the world to attain to the end of human existence by reabsorption into Brahma.

Buddhism lays stress upon the spirit and duties of life. It presses upon men the cultivation of justice, mercy, love. The evil of existence is to be escaped from not through numberless births and deaths, not by meditation chiefly, but by a right life, by right belief, right judgment, right utterance, right occupations, right obedience, right memory, right meditation or keeping the mind fixed on permanent truths. Buddhism accepts the belief in three worlds — the world of absolute being, the celestial world of the gods, and the finite world of individual souls and the laws of nature. Of the world of absolute being it affirms nothing. That is the aim and end of life — to attain unto Nirvana, to sleep and rest there as if they would attain forever that of which the gifted poetess speaks so beautifully: —

O earth, so full of dreary noises!
 O men, with wailing in your voices!
 O delvèd gold, the wailer's heap!
 O strife, O curse, that o'er it fall!
 God makes a silence through you all;
 "He giveth his belovèd sleep."

Where this system of the evil of existence, of rugged morality, of desire of ceasing

to be, would be classified in the development of all religion from ancestor worship, and all ideas of the future from the projection of the present forms of life into unknown places of time and space does not appear. But a religion which has been the guide of men for twenty-five hundred years and which numbers three hundred millions of believers among the great Oriental nations is at least worthy of a passing notice.

In China there are three religions: that of Tao, which seems to be the philosophy of absolute being; that of Buddhism in its Chinese form; and that of Confucius, which deals mainly with the practical duties of the present life.

In the southwestern part of Persia, where numerous ancient inscriptions have been found, there is one translated by a German Orientalist which is of great value because of the light which it throws on the faith of the ancient Persians and the people who inhabited that region. The translation is as follows: "Ahura Mazada (Ormuzd) is a mighty God who has created the earth, the heavens, and men; who has given glory to men; who has made Xerxes king, the ruler of many. I, Xerxes, king of kings, king of the earth, son of Darius, an Achæmenid,

what I have done here and what I have done elsewhere I have done by the grace of Ahura Mazada.”

“The Persians,” says Herodotus, “have no altars, no temples, no images.” The followers of Zoroaster believe in two opposite principles of good and evil, and in two supreme embodiments or representatives and rulers of the same, Ormuzd and Ahriman, the former being the source of good, the latter the source of evil. But with this dualism, they believed that Ormuzd only should be worshiped by men and that he ultimately should triumph. Consequently, Niebuhr and others affirm that the system of Zoroaster is properly monotheistic, being a belief in one supreme God whose symbol is fire and whose law is, “Think purely, speak purely, act purely.”

Of ancient religions, perhaps that of the Greeks approaches most nearly to Mr. Spencer's idea. The Greek deities were not attributes or manifestations of the one Supreme Spirit, but were natural growths. They grew from below. They were evolved. They were either personalizations of nature, or they were idealized and deified men, full of pride, of human passions, and rejoicing in a life like that of men.

There was, however, even in Greece, a deeper faith than the faith in those deities. Mr. Clarke, in his "Ten Great Religions," says of the Greeks: "Besides all the polytheistic and the anthropomorphic tendencies of the old religion, there yet lingered a faith in one Supreme God — Ruler of all things."

Welker, in his "Greek Doctrine of Gods," says: "In the remotest period of Greek antiquity, we meet the words Theos and Daimon, and the names Zeos and Kronon, anything older than which is not to be found in this religion. Accordingly, the gods of these tribes were from the first, generally, if not universally, heavenly and spiritual beings. Zeus was the immortal king of heaven in opposition to everything visible and temporal."

Certain passages in the Greek poets and also in the prose writers confirm this view. In the hymn of Cleanthes, B.C. 260, these lines occur: —

Greatest of the gods, God with many names,
God ever-ruling and ruling all things;
Zeus, origin of nature — governing the universe by law,
All hail.

In a poem preserved by Proclus and Eusebius are the following lines: —

Zeus is the head, Zeus the middle of all things. From Zeus were all things produced.

Plato, in the *Timæus*, says: "How can we find out the Father and Maker of all this universe? Or, when we have found him, how shall we be able to speak of him to all men?" "Let me tell you then, why the Creator of the world generated and created this universe. He was good . . . and he desired that all things should be as like himself as possible. This is the beginning of the Creation and of the world."¹ Plato clearly distinguishes between this Supreme Being and the deities of the Pantheon, for he says a little later: "To tell of other divinities, and to know their origin, is beyond us and we must accept the traditions of men of old time who affirm themselves to be the offspring of the gods." There is in Plato a clear distinction drawn between what may be ancestor worship and belief in an eternal God. It seems, therefore, most evident that back of all specializations and local appellations, the Greeks had some conception of a Supreme Deity.

Max Müller says: "With the Greeks Zeus was and remained in spite of all mythological obscurations the Supreme Deity."²

Müller also says: "The more we go back, the more we examine the earliest germs of

¹Jowett's Translation.

²Science of Language, vol. II, p. 453.

every religion, the purer, I believe, we shall find the conceptions of the Deity, the nobler the purposes of each founder of a new worship." ¹

In Rome, religion was made subservient to the state. All forms of religion could find hospitality at Rome if they came as servants of the state. Superstitions and speculative philosophy, idolatry, and agnosticism may be found there, but nothing to add especially to what we have already found among primitive historic nations. Gibbon says that it came to pass in Rome that "all religions were regarded by the people as equally true, by the philosophers as equally false, and by the magistrates as equally useful."

The religion of the Hebrews, to which Mr. Spencer refers, was indisputably a purely monotheistic religion. The Hebrews were expressly forbidden to cut or mar the body for the dead or to make offerings to them, or to carve any graven image, or to worship anything in earth or in heaven save one invisible God, the Creator and the Ruler of all things. The first of the Ten Commandments, requiring worship of God alone, and the assertion in the latter part of the fourth commandment that he made heaven and earth,

¹ Science of Language, vol. ii, p. 443.

the sea, and all that in them is, are sufficient evidence of the fact that, whatever may have been the belief or practice of any individual, the Hebrew religion in its origin and nature was monotheistic and spiritual. It was not Abraham or any more remote ancestor, but the God of Abraham, whom they worshiped.

The proposed sacrificial offering of his son Isaac on the part of Abraham proved in the sequel to be a protest against the custom of human sacrifice, which was forever forbidden among his descendants. The visit paid to the Witch of Endor by Saul was a violation of the express prohibition of the Mosaic law which forbade a witch to be permitted to remain within the bounds of Israel.

In respect of the original meaning of the names given to the divine Being, such as Elohim and Jehovah, into the discussion and meaning of which we cannot here enter, it is sufficient to remark that no confusion occurs among English-speaking people by the use of the word Lord as a human title, and as a term by which the Supreme Ruler of the universe is designated, and that what the Hebrews understood by these terms is sufficiently plain from their writings, the protests of their prophets against all idolatry, and the practices of their descendants to the present time.

In this summary, I have omitted to mention Mohammedanism, which condemns idolatry and which is preëminently monotheistic; and I have omitted the mention of Christianity also; because, chronologically, these are comparatively modern in their origin. In dealing with the question of the origin of religion and its development, I have referred to the most ancient religions as best adapted to throw light upon the faith of primitive men; for the philosophy and the practices pertaining to the most ancient systems are obviously of more value in deciding the fundamental nature of religion and its true source than are the opinions and practices of barbarous tribes found in the wilds of Africa and in the islands of the sea, the real meaning of many of whose ceremonies is imperfectly understood.

As a matter of fact, in the most ancient and most influential religions of the world we do not find any outline of any such evolution as Mr. Spencer suggests. We find from the first either a conception of an eternal and infinite Spirit from whom all things proceed and unto whom all things return, or a conception of an uncreated and eternal God who is the Creator and the Ruler of all things. I am willing to admit that the con-

ceptions of the moral character of the Supreme Being held by many nations now are in many points superior to the conceptions of his moral character held by more primitive nations; but I affirm that in the most civilized nations and in the most ancient religions of which we have any record there is found the fundamental doctrine of a Supreme Spirit as the source of all life and the highest object of all worship. There is no evidence that this belief is simply the ultimate flower which blooms from the root of ancestor worship, but abundant evidence that this belief is the root of all holiest worship found in the world.

(c) Mr. Spencer's theory is unhistoric. It ignores the very significant fact of moral development under the influence of some religions.

According to his theory, religion consists, fundamentally, in belief in the continued existence of men who have once lived, in fear of their presence and their power, in efforts to propitiate them and secure their favor, and finally in a desire to be exalted, to be with them after death. According to this theory, religion has little to do with the practical moral life of men in their present relation one to another, and consequently

can exert no great influence in the matter of moral and social development.

As a matter of historic fact, however, religion has been a most powerful factor in the moral advancement of a large part of the human race. Some religions, at least, are most practical in dealing with questions of the present life. The Hebrew religion, for example, has little to say of a future life; the dead sleep with their fathers; it draws no picture of the employments and the enjoyments of deified men; it insists on the fact that Jehovah is the Sovereign Ruler over men, and that their first duty is to serve him; it threatens punishments of sin and promises rewards of righteousness in the present life. That there was a great moral development of the Hebrew nation under this system is evident from history. Buddhism and the teachings of Confucius both lay great stress upon the present practical duties of men. Christianity, much as it speaks of a future life, lays great emphasis upon the relation of men to God and their duties to him, now. It enjoins men to live soberly, righteously, and godly; it bids them love their neighbors as themselves, and do to others as they would have others do to them. That in the Western world

there has been great moral advancement cannot be denied; and, however much the advancement may be ascribed to intellectual enlightenment and progress, it is most evident that Christianity has been one of the chief factors. The history of nations cannot be outlined in so brief a treatise as this; but the fact can be stated, and history will confirm it, that moral advancement has followed, and has not preceded, the preaching and the prevalence of the principles of Christianity in the Western world. Departure from those principles has in every instance brought moral deterioration; the practice of those principles has in every instance been followed by moral advancement.

Any one who will candidly compare America and modern Europe, imperfect as they are, with the Europe of two thousand years ago will be compelled to admit advancement in all the finer graces of human nature. The more humane laws of war and treatment of captives, the abolition of slavery, the elevation of women, the prevalence of widespread education, the greater protection afforded to the poor, the efforts to reform the bad, the numerous institutions for the unfortunate and feeble — all testify to the presence

and power of the spirit of benevolence and philanthropy. This moral growth has accompanied the preaching of the principles of Christianity and the practice of those principles. And the highest advancement is to be found where those principles most widely obtain. According to Mr. Spencer's theory, deities are like the men who worship them. But, according to historic fact, under the greatest religions men seek to become like the object of their worship. It is the conception of God which men practically hold which forms their character so far as religion has anything to do in the formation of it. In China, the priests of Buddha say: "Think of Buddha and you will be transformed into Buddha. If a man pray to Buddha, and do not become Buddha, it is because the mouth prays and not the mind."

"It is well said," remarks Carlyle, "in every sense, that a man's religion is the chief fact with regard to him. A man's or a nation of men's. The thing a man does practically lay to heart, and know for certain, concerning his vital relations to this mysterious universe and his duty and destiny there — that is in all cases the primary thing for him, and creatively determines all the rest."

According to Mr. Spencer's theory, a

higher conception of God would be the result of intellectual and moral growth and not the cause of these. As a matter of historic fact, however, although we freely admit that the intellectual and moral grade of man will modify any conception of God which another may desire to produce in him, the doctrine of God which a man believes and his conception of his duty and destiny in the universe do creatively determine his moral movement backward or forward.

As a matter of historic fact, the character of the religion taught and believed underlies the moral character of the people who are taught and who believe the religion. Religion precedes morality rather than follows it. It is well known that in the new portions of the United States the people do not grow religious and moral and then found a Christian church as the result of this growth; but missionary love and zeal first plant a church and introduce religious life and then moral improvement follows as a consequence. So, likewise, in pagan lands, we do not find the beliefs and practices of Christianity preceding the preaching of it; but the system of Christianity is first preached, as in the Sandwich Islands, for example, and the moralities of the system follow as a consequence and fruit.

As a matter of history, we find, in the case of the most beneficent religions, that they precede the moral growth of the people and are manifestly the cause and not the consequence of that growth. And it is scientifically evident that moral as well as physical and intellectual development must proceed along lines that are normal and must coincide not with falsehood, but with truth. "A light which illuminates centuries must be more than an ignis fatuus." And of the great religions of the world we may truly say that it is the truth which they contain meeting some actual want of human nature which gives them power; and the truest religion must be that which best meets and satisfies man's actual wants and moves him most mightily toward the best and highest life of which he is capable.

(*d*) In the fourth place, Mr. Spencer's argument, although ingenious, is sophistical. He attempts to account for religious development on the part of man without any environment with which the religious nature may hold correspondence. If God be unknowable and communion with him be an impossible thing, and all forms of religion be but the product of human imagination moved at times by fear that those once visibly present

may be invisibly present, and moved at times by the longing of a bereaved heart for a beloved face, then, practically, there is no spiritual environment in correspondence with which the spiritual and religious nature of man may normally develop. If this hypothesis be true, we have, in the highest moral faculties and activities of man, a department of nature wholly abnormal and unlike everything else in nature. Man is a religious animal. "If we traverse the world," says Plutarch, "it is possible to find cities without walls, without letters, without kings, without wealth, without coin, without schools and theaters; but a city without a temple, or that practiceth not prayers and the like, no one ever saw." Increased knowledge of the world would modify the form of Plutarch's statement somewhat, but not the great fact which he asserts. Letourneau says: "The Tasmanians, the Australians, the Hottentots have neither temples nor priests nor rites," but even these tribes show a religious nature and practice worship, though their conceptions are of anthropomorphic or zoöomorphic deities. The summary of religious belief already given is sufficient to show that man has a religious nature which imposes faith or

induces fear of a superior or Supreme Being. In the matter of religion as well as in the matter of intellectual power and social affection the true nature of man should be determined not from the few but from the many, and not from the lowest men but rather from the highest. The great mass of men in civilized lands confess at least their religious nature and their belief in a personal Deity.

All feelings and actions of animate creatures express their inherent and essential nature. The feelings are either spontaneously generated or they arise in response to stimuli from without. In all cases below that of the religious nature of man there is an appropriate environment to afford scope for the expression of feeling and to furnish the means of gratification for the wants of all forms of animal life. An individual animal may fail to come into proper correspondence with its environment and may so fail of perfect development, but its efforts to come into correspondence indicate its nature and the nature also of its environment.

The tiny drop of protoplasm dropped from beneath the umbrella of a jellyfish may fail to reach any permanent rock and may fasten upon the shifting sand; but its means of adhesion publish the fact that it is made to cling

to some support. A child may eat that which is poison and not bread, but its hunger for food is declared.

Social relations which are injurious may be established between the sexes, but they declare the social instinct. In like manner, that sense of dependence upon a higher power so common to man, that desire of the heart, so often found in the world, for communion with the living God, those relations which are formed to promote the religious life even though at times they are unprofitable — are all evidences of the reality of the religious nature of man.

All science progresses by the discovery of truth in respect of the nature of relations of objects; all pictorial and plastic art develops by the perceptions of relations and proportions, color and expression, which satisfy the æsthetic sense; all social relations improve by the proper adjustment of the members of society in correspondence with each other.

If, now, religious and moral progress can take place solely by moral movement on the part of the mind of man, without any corresponding environment, without an object of worship to be in any way perceived, without a superior being to be in any way apprehended and loved, without any correspondence by way

of communion with the correlate of human need — then the religious nature is wholly separate from all other parts of the world, and the deepest feelings, the purest affections, and the highest aspirations of men are the one thing in the universe radically false both in emotion and in expression. Religious nature prompts to faith in that which cannot support, to fear that which can never be nigh, to love that which can never bless, and to serve that which can never reward. This is contrary to all the laws of the whole animal world. It is totally at variance with the doctrine of correspondence upon which Mr. Spencer lays so much stress. It is excluded from acceptation by the scientific mind, by the limitations of the law of correspondence which reveals the fact that all forms of life which find no appropriate environment perish and that only such as come into connection with their true environment reach their fullest size and strength and survive. The argument of Mr. Spencer cannot be accepted as true. It seems hardly to satisfy Mr. Spencer himself. Though asserting his theory of the origin of religion, he says, in one of his later books, that “the ghost theory of the savage is baseless,” and “the material double of a dead man in which he believes

never had any existence"; nevertheless, "At the outset a germ of truth was contained in the primitive conception." "The ultimate form of the religious consciousness is the final development of a consciousness which at the outset contained a germ of truth obscured by multitudinous errors." He also says: "One truth must ever grow clearer — the truth that there is an inscrutable Existence everywhere manifested to which he [man] can neither find nor conceive either beginning or end. Amid the mysteries which become the more mysterious the more they are thought about, there will remain the one absolute certainty that he is ever in presence of an infinite and eternal Energy, from which all things proceed." Even Mr. Spencer is compelled to confess that there is a truth in the heart of man manifested in religious consciousness, and a truth without man which is its correlate. We may, therefore, appropriately and profitably consider the scientific significance of religion.

THE SIGNIFICANCE OF RELIGION

THE SIGNIFICANCE OF RELIGION

THE function of science is to perceive and to contemplate phenomena, to ascertain the conditions under which they appear, the laws by which they are governed, and the underlying reality of which they are the expression and the evidence.

All demonstration must finally rest upon what is perceived, and all primal evidence, as the word itself indicates, is founded upon that which is seen as a matter of observation or as a matter of consciousness. All science, after it has by means of perception and contemplation completed the observation and classification of particulars, and so acquired all its evidence, comes back to grasp by a kind of faith that underlying substratum, essence, and reality of which the certainty is undemonstrable, but irrefragable, and so to apprehend those highest truths on which the evidence of other knowledge depends. It is so with that which we call matter, known only by certain properties. It is so with that

which we call mind, known by its faculties. It is equally so with that which is called spirit, known by its feelings, sentiments, aspirations, and correspondences. We trace all force, gravity, chemical affinity, vitality, back to some substance in which it inheres, and we acknowledge the reality of that substance, though we cannot define it, as the basis of the phenomena which we do know. In like manner, we trace all conduct, volition, and feeling back to some substantial reality of which they are the expression and which abides amid all the diversity of acts and mutations of moods. In such a process of investigation, we arrive finally at the end of physical perception, where physics has no deeper vision and no further voice.

Metaphysics does not interrupt the course of physics but simply takes up the thread where physics leaves it, namely, at the original factors in which all causal explanation finds its limits. We find that substance, property, and relation enter into our notion of these original factors.

The sphere of science, that is to say, the sphere of the perception and knowledge of phenomena, cannot be limited to phenomena which are perceived by physical senses, but must comprehend also human consciousness

and all the phenomena which are denominated psychical and pneumatical. Science, in the broadest sense of the term, comprehends all actions, volitions, and causes or entities which come within the range of human perception, experience, and consciousness. "Things as they truly are — facts — are the object matter of science," and moral consciousness and religious feeling, moral law, however expressed, and religious worship, however performed, are proper objects of scientific study.

To this sphere of life whose facts are matters of personal experience and of daily and world-wide observation, I shall apply the methods of scientific investigation and the principle of evolutionary development for the purpose of ascertaining the fundamental and essential realities, of which moral and religious phenomena are the expression and the evidence.

1. There are in the world certain phenomena, such as civil governments, legislative statutes, courts of justice, and social customs, which embody the moral sentiments of men respecting the rights of individual men and their proper relations to one another.

There is a certain attraction or repulsion, a certain feeling of approbation or disap-

probation, a certain feeling of pleasure or of pain awakened by the presence and the perception of certain kinds of conduct and character. There is a sense of relation to other beings, and of obligation to fulfill certain duties in relation to such beings awakened in the minds of men by their presence. This feeling of obligation may be so strong as to lead to the denial of personal gratification and to the repression of personal appetite in order that others may be gratified and benefited.

There is also a feeling of self-approbation or of self-condemnation awakened by personal judgment upon the course of action which has been chosen and the deeds which have been done. These phenomena, which are matters both of observation and of consciousness, are the expression and the evidence of a moral nature in man. I cannot agree with Mr. Darwin, however, when he says the moral sense is summed up in that short but imperious word *ought*; for the moral sense is more than a feeling of obligation. As the sense of taste discriminates the qualities of objects, discerning sweet and bitter; as the æsthetic sense discriminates forms and colors, being pleased with some and displeased with others, — so the moral sense

discriminates the moral quality of acts and of character when those acts and that character may bear no direct relation to the person in whom the sense dwells. The moral sense is like feeling and sight; it is the perception of what is morally good; it is worshipful; it approves and adores that justice which administers rewards and penalties, that mercy which is compassionate and forgiving, and that benevolence which confers benefits upon others. Apart from any feeling of obligation on the part of the individual, the moral sense is worshipful.

Again, the moral sense is the power of perceiving the true nature of relationships and the duties which relationship demands. This may be a perception of relationships and duties between other beings, and the sense of personal obligation does not enter into the perception or judgment. Again, the moral sense is judicial in respect of personal relationships and duties, and affirms what ought to be done under given circumstances. This part of the moral sense may be summed up largely in the word *ought*. Finally, the moral sense approves or condemns motives and conduct, and acts as a reflex avenger of wrong. These four things — perception of what is ethically good,

knowledge of ethical relationships, sense of obligation, and the feelings of approbation or of condemnation—enter into the moral nature of man. This moral nature lies at the basis of moral conduct, social customs, civil legislation, and religious worship.

The question may well be asked: What is the origin of this moral sense which is so highly developed in some members of the human family? There has been an attempt made to answer this question by ascribing the origin of the moral sense to the sense of selfhood and to that self-love which seeks the gratification of appetites in a pleasurable way, and which prompts to the avoidance of personal discomfort or pain.

Mr. J. C. Schurman, in his criticism of the "Ethical Import of Darwinism" (p. 141), says that, according to the common theory of evolution, "the ancestors of man had no moral fiber in their constitution, but through long-inherited experience of the consequences of moral conduct man has been rendered organically moral." The social instincts and intelligence are the elements which are said to enter into the constitution of the moral sense. By a species of psychological chemistry a primitive conscience arises from the combination of these elements.

The social instincts lead animals to take pleasure in the society of each other and to perform many services for each other. Then with the development of mind there is the recollection of the satisfaction or dissatisfaction, the pleasure or the pain which accompanied or followed any given course of conduct, with a consequent knowledge of how one ought to act; and, finally, habit tends to fix the course of conduct, and so, through inheritance and natural selection, the superior moral nature becomes dominant, and the highest form of moral life with which we are familiar is produced.

According to this theory, temperance will be promoted by the remembrance of the discomfort and pain which followed gluttony and drunkenness; chastity, especially among women, will arise from a desire to avoid the displeasure and to secure the favor of a jealous paramour or husband who claims exclusive possession of the person of the woman; respect for property will arise out of love for one's own possessions and the knowledge that only by reciprocal regard for property and mutual protection can personal property be safely secured.

Social relations of mutual assistance or combined defense against a common enemy

arise from the fact that "in the first place, as the reasoning powers and foresight of the members of a society became improved, each man would soon learn from experience that, if he aided his fellow men, he would commonly receive aid in return. From this low motive he might acquire the habit of aiding his fellows, and the habit of performing benevolent actions certainly strengthens the feeling of sympathy which gives the first impulse to benevolent actions." And there are also numerous lines of evidence which are sufficient to establish the belief that religious observances are simply the outgrowth and continuation of certain feelings of relation and of obligation to ancestors and to powerful men, and must be regarded, therefore, as having wholly a natural genesis.

According to the law of heredity, whose bearing upon moral phenomena has been already indicated, the difficulties of accepting this mechanical theory of the origin of the moral sense, conscience, and worship are many and great. The law of heredity imposes the same limitations in the sphere of morals as elsewhere in nature. Evolution unfolds; it does not create.

It is difficult to tell why some races and tribes of men have risen and others have

remained degraded. Many savages are in the same condition in which they were several centuries ago. The races of men that have risen in the moral scale have possessed innate energy, have lived in a favorable environment, and, in the case of those that have risen highest from a lowly origin, have had external inspiration and help from other tribes, or from individuals who have sought to elevate them. It is even claimed by some that history refutes the idea that progress is the normal rule of human society. But without entering into a discussion of this subject, which exceeds our limits, we may indicate some of the essential requirements of moral evolution under the law of heredity.

There could be no perception of moral qualities, such as justice or mercy or benevolence, without an inner moral sense corresponding to those qualities. This would be quite as impossible as to perceive and delight in the sweetness of sugar without the end-organs of taste, or to appreciate music without a musical ear. The sense of taste may become more discriminative, the musical ear may become more refined, delicate, and accurate, but taste and hearing are both original senses which lie at the basis of all judgments which depend upon them. In

like manner, the moral sense is an original endowment. Its movements are not prompted by memory, but they are spontaneous. It does not prompt to that which is least painful and most pleasurable, but often to the very opposite of this. It does not prompt to that which is always most pleasant or most profitable to the individual, as it should if it is simply expanded and enlightened self-love and selfishness, but it prompts to that which is right, and the right often demands the abnegation of personal profit and pleasure.

We cannot account satisfactorily for the development of moral nature simply from social instincts. They must be morally social before they can be developed morally. Upon the principle that like begets like, which we recognize in the moral as in the physical world, it is impossible that from the supreme selfishness of the man who aids his fellow men simply to be aided in return the principle of unselfish and self-sacrificing benevolence should be developed. Such sweet fruit does not spring from such a bitter root.

If the prime principle of social evolution is pure selfishness, it is impossible that by the aid of active intellectual powers and the effects of habit it should lead naturally, as Mr.

Darwin says it would, to the Golden Rule, — “As ye would that men should do to you, do ye also to them likewise,”—which lies at the foundation of morality.¹ According to this principle, the Golden Rule should be changed so as to read, “Do good to men in order that they may do good to you”; and from this principle those disinterested motives and benevolent actions which confer benefits out of pure love, and do good hoping for nothing again, could never come. Though the principle of social instinct will account for many social organizations, there are many for which it will not account. They transcend its philosophy. In spirit more than in form even the law of heredity holds, and selfishness as the germ can never produce the fruit of love. Consciousness in many cases is against the theory of utility in morals. Love acts often without considering the end and the reward.

We have no facts to show that a principle of action which would lead to cruelty will naturally produce kindness, or that a principle which would lead to theft will naturally produce honesty, or that selfishness will naturally become transformed into benevolence, or self-love lead to self-abnegation and wor-

¹Descent of Man, i, p. 102.

ship of another being. Nor have we any facts to show us that the ostracism of primitive society, or the penalty of violated law, would lead men into a moral life unless there was first a moral life existing as a basis to work upon.

The moral quality of those actions which are performed solely that the performer may be benefited, and those actions which are performed solely for the benefit of others, as many actions are, differ not in form but in the spirit by which they are animated and the source from which they spring. The survival of the fittest is not the origination of the fittest. The selection of the best by nature is not the cause of the best. Nature demands a positive as well as a superlative. There can be no best to be selected by nature and no fittest to survive until there has been some good from which they spring.

As we are driven back to the recognition of life as an original factor which precedes and conditions organic development; as we are driven back to the recognition of original and spontaneous instincts which precede and condition the development of social life; as we are driven back to the recognition of mental spontaneity and consciousness as preceding and conditioning intellectual

development, — so we are driven back to the recognition of an original moral nature endowed with powers of spontaneous action as preceding and conditioning development in the sphere of morals.

We conclude, therefore, that by the law of heredity, as in the case of organic and intellectual evolution, there must have been a latent and potential moral sense in the first protoplasmic form or forms of life; or else that some forms, and not others, must have possessed this dormant sense; or else that at some point in the course of development a new power, that of moral sensibility, discrimination, and action, must have been imparted to some of the forms of life.

It is evident from the first law of evolution that a moral life having innate power of perceiving moral qualities, of forming moral judgments, and of impelling to moral acts must be accepted as an original form of life in the world. The development of this original form of moral life must, according to the principles of evolution, be conditioned and determined by the law of variation and the law of correspondence.

In organic life, variation is possible in two directions — in the direction of degeneration and in the direction of growth and perfection.

The variations which are permanent and beneficial are those by which the parts of an individual organism are brought into the most perfect relation with each other by means of the specialization of functions, and into the most perfect relation with their proper environment by means of a true and normal correspondence therewith. We do not look, therefore, for the typical form of animal life in the lowest orders of a series, but in the highest order. We do not examine the fossil remains of reptilian birds of a past geological period to find typical birds; but we examine the most perfect and most beautiful birds of the present time to find the most complete type of bird life. The highest and best forms of life everywhere are those whose variations from the lowest forms are regarded as having been in a normal direction, and whose perfection is regarded as being due to normal correspondence with a proper environment. Mental life progresses by the perception of the qualities and relationships of objects by which animate beings are surrounded, and by the adjustment of those beings in whom the mental life operates to the objects which form the total environment. The highest mental life exists when there is the widest

and the truest correspondence. Moral life progresses in obedience to the same general laws of development. Moral variation is possible in two directions — in the direction of deterioration and in the direction of development. There is on the part of many men a moral (or, as we say, immoral) movement, which tends to the disintegration of society, the destruction of property, and the degradation of character. There is a moral movement on the part of many men which tends to the elevation of character, the acquisition and the preservation of property, and the integration of society.

This upward movement is unquestionably conditioned upon the clear perception of definite relationships and the true adjustment of men in those relationships.

We do not look for typical moral belief and practice in the lowest orders of the human race, but in the highest orders. As we conclude, from the laws of evolution, that the strongest, the highest, and the most perfect forms of life, everywhere, are those whose variation has been normal and whose correspondence with a proper environment is most complete, so we are forced to conclude, by all analogies, that, in the sphere of moral life, those moral conceptions and actions

which obtain among the races and nations and classes of men among whom health and happiness, individual prosperity and national power, domestic felicity and public peace are greatest, are the conceptions and actions which are most truly conformed to the normal moralities of the universe in which we live. We are compelled to infer and to admit that, according to the well-known facts of the laws of variation and correspondence, the character and the conduct, the customs and the civilization which obtain among men whose life is evidently largest in relations, best in quality, highest in attainments, and holiest in character, are such as express the truest moral life with which we are familiar. The convictions of conscience, the conceptions of moral law, the sentiments of right which underlie the best forms of individual, family, social, and national life must be regarded as resting upon the perception and knowledge of that which is true.

The scientific study of moral phenomena, which are as positive as any phenomena in the world, leads practically to the same conclusion as that to which Kant came in the investigations of his speculative philosophy. He says: "I assume that there really exist pure moral laws which entirely *a priori*

(without regard to empirical motives, that is, happiness) determine the use of the freedom of any rational being, both with regard to what has to be done and what has not to be done; and that these laws are imperative *absolutely* (not hypothetically — only on the supposition of other empirical ends), and therefore in every respect necessary. I feel justified in assuming this, by appealing, not only to the arguments of the most enlightened moralists, but also to the moral judgment of every man, if he only tries to conceive such a law clearly.”¹

This is the claim which we make for moral law as it lies revealed by the scientific study of moral phenomena under the laws of evolution. Moral action is not produced simply by the memory of past profit or loss, pleasure or pain, but proceeds primarily, like all vital action, from an innate impulse prompting to that course of action which is felt to be right; and moral law is not the intellectual conception of a principle of utility and of policy, but the conception rather of those moral conditions of life under which men live, obedience to which is both felt to be a duty and found to be the course of health and happiness. In accordance with this fact, the

¹Critique, Müller's Translation, p. 692.

highest forms of life in the relations which men sustain to one another will be conditioned upon and connected with the most complete conformity to moral law, and will be at the same time the ostensible and objective evidence of the reality of that law.

We conclude, therefore, that the common, widespread, and permanent beliefs of the most intelligent and the best races, nations, and individuals of the human race, in respect of human nature, relationships, and duties in the sphere of morals, are beliefs which are based upon truth, upon reality, and which are, therefore, as certain and as worthy of acceptance and destined to as great permanency as any beliefs which the human mind may accept or by which human life may be directed.

2. In addition to the moral phenomena of which we have spoken, there are also certain forms of moral phenomena which express a knowledge or a belief, or a feeling of relationship to some Being higher than man. There are phenomena which express on the part of man a sense of dependence upon some higher Being and a feeling of obligation to please and serve him; and these are denominated religious phenomena.

Plutarch says: "There are some philoso-

phers who define religion to be the science of worshipping the gods." Modern science, when it assumes to account for all things with which we are familiar, cannot overlook the fact of worship nor ignore the feelings of fear and of faith which underlie worship, nor exclude religion from the list of subjects of which it treats. That which first meets the eye of the scientific student of this department of human life is the institutions in which religion is embodied. There are beautiful temples which have been builded for a dwelling place of the invisible Deity. There are sacred shrines where the soul of the worshiper seems secluded from the world and swept into the sweet embrace of God. There are altars upon which are laid gifts and sacrifices which oftentimes express great self-denial on the part of the offerer and which are presented to One supposed to be worthy of supremest love and most devoted service. There are prayers which embody the petition of a needy heart and give form to the cry of an anxious spirit poured forth only for the ear of an omniscient and omnipotent One; for only such an One can both hear and help.

There are practical duties which are performed in the hope that they serve a Lord

whose favor and whose approbation shall constitute a supreme reward.

There are songs sung upon earth, in villages and in cities, in valleys and upon mountain sides, which express the sentiment of trustful and loving souls toward a heavenly Friend and Father. The highest gifts of men have been consecrated and the greatest skill of men has been used in the expression of religious sentiment and in the embodiment of religious service. Architecture and sculpture, painting, poetry, and music have been the servants of religion.

It has been said that "Art itself in all its methods is the child of religion." Religion, however, does not depend upon the visible institutions which she forms, but the institutions depend upon religion. They are the blossoms and not the root, the embodied ideal and not the spiritual reality. They vary with the intellectual and artistic development of men, but, in comparison with the works and forms of expression of any age and class of men, the forms of religion are relatively of a high order. Now, that feeling whose embodied form is always relatively high cannot be fundamentally false. Those feelings, convictions, and beliefs which men have expressed in the sweetest music, in the purest

speech, in the fairest material forms, and in the most impressive services cannot be both meaningless and baseless, nor can the highest uses of the æsthetic sense be against both nature and truth. Rather may we regard these highest gifts in their highest exercise as expressing the highest truth. This is what poets, who are seers perceiving the spirit of things, have conceived to be true; as Longfellow has beautifully said:—

He is the greatest artist then,
Whether of pencil or of pen
Who follows nature. Never man
As artist or as artisan,
Pursuing his own fantasies,
Can touch the human heart or please
Or satisfy our nobler needs.

Art can satisfy only as it expresses that which men long to express of their own feelings or thought, or as it ministers to their inward craving and their absolute want. The forms of religious service found everywhere are therefore significant.

All appetites, all passions, all cries, all actions of the entire animal kingdom are significant; and the deepest appetites, the strongest passions, the most earnest outcries, and the noblest actions of human beings cannot be without signification.

If the spike-pointed shell secreted by the

sunslime, and the whip-like cilia by which the sponge secures its food, and the lashes by which the feather-star swims, and the lasso cells by which the hydra and the sea-anemone pierce and capture their prey are all indices of inherent nature and quality of life and relation to environment by which these tiny creatures are sustained, then, in like manner, the actions of other beings, even in the highest ranges where faith and love prevail, express their inherent nature, the quality of their life, and reveal the environment by which they also are sustained.

If the dam built by the ingenious beaver, and the hiding places selected by beasts of prey, and the sweet songs of birds during the pairing season indicate the nature and the conditions of the life of those creatures, then altars and temples built by men and prayers and songs of praise offered by them indicate in like manner their nature and reveal the kind of environment with which they do or should correspond. If an environment is essential to the preservation and the perfection of life in the physical, mental, and social spheres, then an environment is essential also for moral and spiritual development.

A second fact which the scientific student of this department of human life observes is

the well-nigh universal intellectual opinion, belief, conviction of the existence of superior beings or of a Supreme Deity. This intellectual conception is not confined to the primitive man or to the ignorant one, but is found to prevail among the most advanced men and the most learned ones.

The most intellectual and the most thoughtful men of all great races and of all ages, who have penetrated most deeply into the heart of things which they have perceived, have had an intellectual conviction of a First Cause, of an intelligent Mind, of a present and controlling Power manifested in and through the material universe. My limits will not permit of quotations from the works of great men, nor are such quotations needed by the reader who is familiar with history, poetry, and philosophy. It will be sufficient to give one quotation from Cicero as a representative man. He says: "The beauty of the world and the orderly arrangement of everything celestial makes us confess that there is an excellent and eternal Nature, which ought to be worshiped and admired by all mankind."¹

It may be said that this particular intellectual belief is an inference drawn from the

¹ *Divin.* vol. ii, p. 72.

manifestations of mind and will in the ordering of the universe. But to this I reply that an inference drawn by so many men in so many ages is not to be rejected as false because it may differ as to the basis on which it rests from some other forms of knowledge. Such an inference has presumptive authority. I also reply that the intellectual belief in God through the manifestations of mind and will in nature rests upon the same kind of evidence as the belief in electricity, which is known simply through its manifestations.

But all that I desire to claim at the present time is the fact that the scientific student of human life in all its parts finds a widespread belief in the existence of a personal God as one fact which he must accept as a psychological phenomenon and, therefore, as something to be accounted for in a comprehensive philosophy of the earth or of man.

A third fact which the scientific student of religious phenomena observes, and which to my mind is a deeper and more significant fact than that of the intellectual belief in God which has just been mentioned, is the sense or feeling of a relation to a divine Being which appears in so many ways.

Religion is a sense of relation to an original Cause upon whom life itself depends. Religion is a sense of individual weakness and dependence upon some Power higher than mere natural forces in nature. Religion is a sense of the imperfection and evil and pain of the present and a desire to be in some way delivered from these sources of suffering and sorrow. Religion is the feeling, apparently almost instinctive, that there is a Power that can deliver from sin and suffering, a Power that can save and bless.

Religion is the desire for communion with the original Source of life, who is also the Preserver and Saviour of life.

A sense of relation to a Supreme Being, of dependence upon him, of obligation and responsibility to him, and a desire for his approbation and blessing are as real on the part of multitudes of men as are any convictions or feelings of which men are conscious, and are, as phenomena, entitled to equal recognition; for the truths of experience pertaining to men everywhere and in all ages are the highest and most absolute truths. The belief in God is so widespread, so permanent, and so pronounced that no man who treats of human nature and life in any comprehensive manner can overlook it.

The scientist who reaches the bound of his touch and the limit of his vision may call the somewhat which evidently lies beneath his touch and beyond his vision and which obviously supports the mutable and transient things which are the objects of his knowledge "The Unknowable"; the philosopher who resolves all things into forces and laws and causes may call that force which transcends his classification, and which is manifestly the cause of those movements and results which transcend physical force and human will, "The Not Ourselves"; the superstitious worshiper who feels simply that his life rests upon some immeasurable power may lay his sacrifice and floral offering upon an altar inscribed "To the Unknown God"; the man of feeble but filial faith may feel after God if haply he may find him, — but they all testify to the reality of the conviction in the minds of men of the existence of a Supreme Being, from whom are all things and by whom are all things and in whom all things live and have their being.

I have now designated certain religious phenomena, some of which are palpable, some of which are visible, and all of which are perceptible. The existence of these phenomena must be accounted for.

Here are certain well-ascertained facts of human conduct, volition, and feeling, whose laws must be discovered and whose real source must be accepted as a reality.

How shall these phenomena be classified? What are the laws of their manifestation? What are the fundamental facts which must be accepted as the basis of their existence? What are the realities of which they are both the expression and the evidence?

These questions some evolutionists do not even ask, let alone answer. Others attempt to classify all religious feeling with the social affections and emotions of the animal kingdom. But, even if we accept this classification, we must nevertheless claim that difference in degree must be due to difference in relation. A bird may refuse to eat the insect which it holds in its bill and may reserve it for its young, and a dog may refuse to eat his master's dinner over which he stands guard; but such refusals show simply a sense of relation on the part of the bird and the dog to other beings. What shall we say of similar acts of self-denial on the part of some men which spring out of a sense of relation to a Supreme Being? A dog's conscience is a sense of his relation to his master, but the conscience of many a man is a sense of relation to God.

If the conscience, the emotions, and the volitions termed religious have their ground in the social nature of man, the question of their true nature is not solved while we must still ask if these social relations, though they be of faith, fear, and love, are not higher than the social relations which reach their limit in the relationships of beings which are perfectly familiar to us. "Religions," says Schopenhauer, "are necessary for the people, and an inestimable benefit to them. The value of a religion will accordingly depend upon the greater or less content of truth which it contains under the veil of allegory, and then upon the greater or less distinctness with which it becomes visible through this veil, thus upon the transparency of the latter."¹ Religion is true, not in *sensu stricto et proprio*, but in *sensu allegorico*. "Truth cannot appear naked before the people." But if pessimistic philosophy must admit both the need of religion and the allegorical truth of it, and that its benefit increases in proportion to its truth, then a true and sound philosophy must confess that on the part of man there is a religious nature which needs and craves a corresponding environment. And if religion, especially the

¹ *World as Will and Idea*, vol. II, p. 370.

greatest religions, are true in an allegorical sense, there must be some truth for which the allegory stands and some reality of which the forms of religion are at least the drapery.

As advancement in all other spheres comes by the perception of true relations and correspondence in those relations, we should expect religious advancement to depend on the same conditions and to proceed along the same lines. In this case the value of a religion in its moral usefulness would be evidence of its truthfulness, and its truthfulness would be an evidence of the realities of those things which it expresses.

We trace all force, gravity, chemical affinity, vitality back to some substance in which it inheres, and we acknowledge the reality of that substance.

We are wont to ascribe the actions of all living beings either to a spontaneous and volitional movement arising within, and revealing some want and some relation of the living being, or to reflex action which arises in reponse to some stimuli applied from without, which also reveals a relation.

If religious feelings and actions are spontaneous and volitional, what want and what sense of relation do they reveal? If on the

other hand they are reflex, what are the stimuli which awaken them? They express evidently a conscious human want of correspondence with some Being higher than man in the hearts of at least some men. They give evidence that there is a Supreme Being whose breath can act as a stimulus upon the inner nature of man.

These are the ultimate facts in which all the diverse forms of religious belief have a common basis. These are the ultimate grounds of religious phenomena and the ultimate relations which these phenomena express. It is not scientific to define religion as a sense of relation to dead men; but it is scientific to define religion as a sense of relation to a living God. This is the fundamental, essential, and "eternal fact" which religion, "everywhere present, as a weft running through the warp of human history," expresses.

Our present purpose, however, is simply to show the bearings of the acknowledged laws of evolution upon the subject. We simply claim that in a comprehensive science the phenomena of the religious spirit are entitled to an equal place with the phenomena of mind and matter. And as the phenomena of the latter take place under certain con-

ditions and reveal certain relations, so the phenomena of the former must also take place under certain conditions and must reveal certain relations.

By the law of heredity we have already ascertained the fact that physical, mental, and moral life are original forms of life in the world. That is to say, physical, mental, and moral life are original sources of action and expression of whose origin science can give no definite account, but whose existence and operation science accepts and describes as science accepts and describes the existence and operation of magnetism. By the application of the same law of heredity by which we seek to trace vital phenomena to their source, the claim must be made that a religious nature which expresses itself in the emotions of fear and faith, in the utterance of prayer and praise, and in the acts of consecrated service, is an original form of life in the world.

Religion, so far as it is embodied in a system of belief and a ritual of worship, is neither the outgrowth of something false to human nature nor a perverted growth of some other part of human nature, like the purely social affections, for example ; but it is rather the expression of an integral part of

human nature which has a definite place and purpose and sphere of action.

The religious outgrowth, as in other forms of life, may be abnormal or feeble or dwarfed; but the religious nature remains as a reality, even as the inherent nature of a plant or of a bird would remain, though in the case of one the poverty of the soil, and in the case of the other scarcity of food or inclemency of climate, might dwarf the growth and lead even to an attempt to live upon that which is not food. Religion would remain even if the superstitions connected with it were removed.

By the law of variation, we found that in the physical, mental, and moral spheres of life variation was possible in two directions: in the direction of degeneration and in the direction of development. By the same law we found that the highest forms of life expressed the normal, typical, and true form of life.

By the same law it is evident that the religious nature may deteriorate or may develop. By the law of variation it is also evident that the highest and best forms of religious expression and belief are those which conform most fully to the normal, typical, and true form of life.

The scientist who believes and teaches the doctrine of physical evolution cannot trace every step in the process of organic development or designate every cause of variation. The scientist ascertains the conditions under which vital action takes place, the course of development, the resemblance between different species or between members of the same species, and concludes from all his observations that the normal course of growth is progressive, and that the highest forms of life among different species or among different members of the same species are those which have found and fulfilled the greatest number of conditions of growth, and that they therefore express most fully the highest powers and the widest correspondence of physical life. The highest and not the lowest forms of life reveal the true nature of any species or variety of living beings.

No more must be demanded of him who treats of religious phenomena under the law of variation than is demanded of him who treats of physical phenomena under the same law.

An exact history of the development of religious feeling, belief, and practice may not be possible; but the course of variation and the development of religious worship

and character are matters of positive knowledge.

It is not necessary for us to determine what was the original form of belief in the world. In the sphere of the religious life, retrogression is possible as well as progression. The resemblances and the differences which now exist between the various forms of belief and practice can be ascertained. The variations are from polytheism to monotheism, from anthropomorphic conceptions of the Deity to the conception of an infinite Spirit, from divinities described by Pope's couplet as

Gods vengeful, passionate, unjust,
Whose attributes are rage, revenge, and lust,

to a God of love and purity, of justice and mercy, of compassion and grace, who is the Source of life and the Giver of every good gift, who is good to all, and whose tender mercies are over all his works. The forms of religious worship vary also with the varying conceptions of the object of worship. How the higher conceptions of God have come into the minds of men we may not scientifically be able to tell. Knowledge of magnetism or of electricity, whose actions are perceptible but whose essence is unknown, increases with the observation of

effects which are properly attributable to such a force.

The knowledge of God, whose essence cannot be perceived but whose presence and power men have always regarded as manifest, even as the mind of man is manifest through the actions of his body, may be increased.

Men may be compared to dwellers in a mountain valley enclosed by lofty ranges upon the east and south and west so that the sun is ever invisible. But the light of the sun dispels the night and produces warmth and light. The dwellers in this valley know the qualities of light, that is to say, the qualities of the sun, but the sun *per se* they do not know. Some of these men may look up and behold the colors of the light painted by penciled rays in a bow upon a passing cloud, while others, looking down to earth, see only deeper shadows. Some may climb to heights whence they have expanded vision of distances bathed in light, and may have enlarged conceptions of the extent and power of the source of light. To some the sun may have stood revealed for a little season through a cleft in the mountain range which only they themselves may have seen.

It is manifestly possible for such dwellers

in the valley to have varying degrees of knowledge both of the light and of the sun himself.

It may be that knowledge of the invisible God, of whom light is a fitting symbol, is possible in manifold ways. Some men may see only the movements of the material forces of nature. Some men may look up and behold in the jeweled heavens the glory of God, and perceive through the things that are made his eternal power and Godhead. Some men may, by their meditation and their aspiration, rise into communion with the spirit of life and thought, and in their knowledge of God may transcend the mass of men. And who can say that God cannot break through the palpable and visible barriers of material things and, in some form and way, reveal himself to chosen men? This partial digression is not intended, however, to take up the subject of the manner of communion with God and of knowledge of him, but is intended simply to indicate some possibilities of varying knowledge.

According to the analogies of all other forms of life in the world, viewed under the law of variation, the highest conceptions of God and the holiest conceptions of worship and service ought to be regarded as most

normal and most true. It is a fact worthy of more than a passing notice that the religions of the world which are most widely believed, which are greatest in power and most permanent in duration, such as Brahmanism, Mohammedanism, the Hebrew religion, and Christianity, are essentially or formally monotheistic. It is worthy of note also that the highest conceptions of the holiness, justice, and judgment of God underlie the most spiritual worship and the most sincere religious life of men. This is manifest, however, in those facts which come more properly within the scope of the law of correspondence.

By the law of correspondence we found that any form of life, physical, mental, or moral, becomes complete and perfect in proportion as it fulfills the conditions of growth by coming into reciprocal connection and communion with its appropriate environment. Mr. Darwin says: "All organic beings have been formed on two great laws; namely, unity of type and the conditions of existence. In fact, the law of the conditions of existence is the higher law."¹ And we may as truly say that the law of the conditions of existence applies to mental and moral life as perfectly as to physical life.

¹Origin of Species, pp. 166, 167.

No life develops or even continues anywhere without environment and without correspondence. The eye and the light, the body and food, love and the object of affection exist for each other.

As a matter of fact, that animal whose correspondence with the circumambient air and with appropriate food is most constant and perfect is strongest. That man whose intellectual perception of the phenomena of nature and of their causes and their effects is widest and most accurate is most advanced in knowledge. That man who sustains the largest relations of love and sympathy with his fellows is the man with the best developed social nature. And as a matter of fact, also, those men who have believed in the existence of a God holy and omnipotent, who have trusted him for support, who have sought his guidance, who have striven to become like him and have claimed communion with him, have as a class attained the highest and the largest moral character which the world has seen. The evidence for their faith may have been wholly or in large part subjective, and hence only sufficient for themselves; but the reality of their life is objective, and the philosophy which sufficiently accounts for that life is the philosophy which accepts

both the spirituality of their nature and the reality of a spiritual God with whom they held correspondence. The human experience of renewed strength and moral inspiration through communion with the divine Spirit are as real as the renewal of physical strength by the reception of food or increase of energy from physical stimulus of any of the senses.

As a matter of fact, also, we find the form of religious life changing with the growing conception of God and the idea of his relation to men. With the conception of the unity, the omnipresence, the spirituality, and the holiness of God, worship is offered, not in some sacred place alone, but in all places; the spirit of divine service enters not simply into religious rites but into the entire life; God is supposed to be more pleased with the saving of life than with the offering of bleeding sacrifices, with feeding the hungry than with fasting, and with a spirit of forgiveness than with a spirit of revenge. As a matter of historic fact, those forms of religious service and life which elevate the individual man and benefit the human race have not preceded certain conceptions of the holiness and goodness and graciousness of God, but have followed such conceptions and are found in those parts of the world where such concep-

tions of the being and character of God obtain, and belong chiefly to the men who seek to form their own life according to these conceptions of God.

The flowers bloom where the sunlight has kissed and warmed the soil; the needle which has been touched by a magnet has magnetic power; and by the analogies of the law of correspondence in the lower forms of life, we may claim that the highest conception of God and the holiest religious character spring out of communion with him and the inspiration of his Spirit which gives power.

Even as Lotze says: "The same as we experience under the influence of physical stimuli, we may experience from direct divine operation within our hearts."

Only upon the basis of a spiritual nature in man and an environment of a living God, from whom he may receive inspiration and strength, can we account for those forms of life which both triumph over the lusts of the flesh and at the same time bless the world with their benefactions. The fact that some men are mainly destitute of these higher spiritual desires, and know nothing of this spiritual correspondence, no more disproves the reality of such desires and communion than the fact that some men have but little

intellectual life or social affections disproves the reality of these for men who both possess and enjoy them. Science is not called upon to explain what is absent in certain places, but to explain the causes and conditions of those things which are present in any place.

All demonstration, as I have already remarked, ends in a kind of faith, that is to say, in an apprehension of a substantial reality which underlies the phenomena which are perceived and known. By the law of correspondence, under which all life in this world exists and develops, it must be claimed that the only scientific basis of the religious phenomena which are so universal among men, and so permanent, is a religious nature in man and a divine Spirit with whom there may be correspondence by worship from the human side and by inspiration from the divine side. If this is not the case, then nature, which furnishes food for every hunger, an object for every affection, and a sphere of action for every innate power, fails and is false in the highest ranges of life. Shall the well-nigh universal conviction of relation to God be without foundation in fact? Shall the fear of the evil heart, which recoils instinctively from a divine Avenger of wrong, be utterly baseless and therefore useless? Shall that

faith which reaches out like the tendrils of a vine, feeling after God, find no God who can support? Shall prayer, which is the cry of a burdened heart and of a needy spirit, reach no listening ear and receive no answering response? Shall the hungry heart which the world has utterly failed to satisfy receive no other bread? Shall the loving and longing spirit of the most holy men enter into no communion with One all-loving and all-holy?

Shall the most beautiful character and the most fruitful life which spring from faith in God, from love of him, and from hope of his reward be utterly baseless and useless? If materialistic evolution be held to be true, that is absolutely held to be the case, and this highest form of life, unlike all other forms of life, is false in its origin and in its outgrowth. If philosophic agnosticism be held to be true, then, also, the religious life is practically false; for there can be neither knowledge of God nor communion with him.

But I claim that, by the laws of evolution, materialism and agnosticism are scientifically untenable. By all the laws and facts of life, an outreaching of a living being into an empty void, an outcry into a vast vacuum, and an outgrowing into dry, dead air are vital impossibilities.

By all the facts of science and by all the laws of life, I claim that the highest instincts of living beings as well as the lowest, the loftiest outreachings of heart or mind as well as the lowest, must be normal and true and must have as their correlate with which they can correspond an object upon which they can fasten and feed and by which they can be satisfied and live.

By the law of heredity, as already shown, nothing absolutely new is known by us to originate (for our knowledge always begins with things that are); but all progress is a development of something which has been begotten under more favorable conditions. By the law of variability, everything which varies permanently from its original form varies by coming into more perfect correspondence with its appropriate environment. By the same laws, that spiritual life which manifests itself in time and develops through faith, worship, and obedience must have a real existence in human nature and develop through correspondence with its appropriate environment. Otherwise, by the limitations of the law of correspondence or the law of the survival of the fittest, such a development would be an impossibility.

If evolution be true, and from an original

germs or germs all forms of mental, social, spiritual, and religious life in the world have developed; or if new forms of life have been at some time and in some manner added to the original forms and then developed under the operations of the laws of evolution, — then, in the name of science, which perceives all phenomena, traces them to their source, and apprehends their cause and the conditions of their manifestation and development, we claim recognition and place for that spiritual nature which has capacity for correspondences with the living God; and we claim, also, recognition and place for the presence and power of the Spirit of God in contact with the souls of men.

I may add in concluding this chapter that the merit of this work lies in the fact that in it scientific methods and principles are applied to religious phenomena more directly and fully than in any work with which I am familiar. I have approached religious phenomena from the very opposite standpoint from that of the preacher who proclaims published truth. I have approached moral and religious phenomena from the standpoint and in the spirit of the scientific student who seeks to observe and to learn what they are and what they signify. I have pursued the

inductive method of the scientific philosopher who observes and classifies phenomena, traces them to their source, and ascertains the conditions of their manifestation. I have applied the principles of evolution to moral and religious phenomena, not, indeed, in tracing the chronological history of their growth and development, for that has not been my purpose, but in determining under the laws of evolution what are the original sources of such phenomena, what are the normal courses of development, and what are the conditions under which moral and religious phenomena become complete and perfect.

It may be in order, therefore, to recapitulate the points which pertain to the foregoing argument.

(a) There are in the world certain religious phenomena, such as forms of worship, intellectual beliefs concerning God, and spiritual sentiments toward him.

(b) By the law of heredity these phenomena are clearly traceable to a religious nature, a living spirit, a form of life which must be accepted as original, even as physical life and consciousness are original forms of life.

(c) By the law of variation, the normal course of development of this original life

will be in the direction of the expansion of native powers and in proper correspondence with a normal and appropriate environment. In accordance with the facts of life everywhere else plainly perceptible, the highest and best forms of religious feeling, worship, and action will indicate most truly the normal and typical life and reality of which they are the exponents and the evidences.

(*d*) By the law of correspondence, under which we find that every form of life has its environment and atmosphere, communion with which is essential to the continuation and perfection of any form of life; we find also that the religious spirit must have its appropriate environment and that the development of the religious spirit into a strong, healthful, useful, and noble life is scientifically possible only upon the basis of a living divine Spirit who is the proper object of faith, love, worship, and service and with whom the spirit of man may enter into correspondence.

(*e*) The conclusion arrived at is that the evolution of religion, that is to say, the development of religious feelings, beliefs, and forms of worship, arises out of an innate religious spirit in man and is conditional upon correspondence, by worship and

by inspiration, with a divine Spirit, a living God, who is worthy to be worshiped, loved, and obeyed and who is the source of those inspirations which lead men to seek after holiness and a truly useful and beneficent life.

The work which I have thus performed is a contribution to that movement in the direction of the application of scientific methods to phenomena higher than the realm of organic and physical life, which is indicated by the little book of Mr. Fiske, entitled "The Idea of God," and several works which have recently appeared.

What I have done in pursuing my way along this path will be more completely done, no doubt, by abler hands, in the near future. Toward such higher studies and service the trend of scientific investigation and thought seems to be moving. And it seems impossible that it should be otherwise; for, as Matthew Arnold has said, "As all roads lead to Rome, so all questions lead to religion," which, with his accustomed grace of style, Mr. Arnold has called "the most lovable of things."

Of true philosophy Kant says: "Its only goal is wisdom, and the path to it is science, the only path which, if once opened, is never grown over again and can never mislead."¹

¹ Critique, p. 730.

The path of critical scientific investigation which has of late years occupied the scholarly world and which has so often been content to stop at proximate causes and temporary relations will, I confidently believe, be opened further and further by those who combine the scientific method with the insight of the metaphysical spirit until that path shall lead beyond the confines of physical phenomena into the realm of spiritual phenomena where men will perceive spiritual experience, correspondence, and reality, where they will reverently confess that there is a spirit in man and a living God who is a Spirit worthy to be worshiped in spirit and in truth, correspondence with whom constitutes the consummation, and moral likeness to whom constitutes the crown, of the highest possible life.

A SCIENTIFIC
STUDY OF CHRISTIANITY

A SCIENTIFIC STUDY OF CHRISTIANITY

MAN is a religious being. Man is endowed with a sense of relation to God. There is no race of men without some religious faith, some form of worship, and some hope of a future life. These things are the evidences of a religious nature and the elements of a religious life.

The normal development of a religious nature, according to all the laws of life and growth with which we are familiar, must proceed by means of correspondence with a correlated and an appropriate environment. The highest development of a religious nature, according to the laws of evolution, must be the result of normal correspondence with an appropriate and a true environment. The truest religion, therefore, must be that religion which establishes the most complete correspondence between man and God, and which procures the normal development of man in that direction which tends to the perfection of moral character and to the

attainment of the highest possible moral good to the individual man and to human society.

There is a religion, Oriental in its origin but prevailing in the Western world and spreading now in all lands, which claims to be the absolutely true religion. This religion has proven its adaptability to so many races, has produced such great changes in the character and the conduct of individual men, has, in many places, so purified and elevated society and so affected for the better the spirit of the world—that it is above all other religions worthy of scientific study. This religion is Christianity. The origin of Christianity, so far as that origin is embodied in the character and life of Jesus, its Author, and recorded in the books of the New Testament, must of course be studied primarily according to literary and historic methods of criticism. As Mr. Huxley has said: “The question as to what Jesus really said and did is a strictly scientific problem which is capable of solution by no other methods than those practiced by the historian and the literary critic.”

This method of investigation does not lie within the limits of this treatise and is therefore left entirely to those to whose special department of study it belongs.

The method of investigation which is pursued in the present treatise is the inductive method : namely, observing phenomena, tracing them to their source, and ascertaining the ultimate facts which underlie them.

The fundamental difference between the present method of studying Christianity and the literary and historic method may be illustrated by a single example. The literary and historic critic asks this question : Did Jesus and the apostles teach that if a man believes in Jesus he would be saved? According to the method now followed, the question is asked, Does the man who believes in Jesus find that he is saved? That is to say, Does faith in Jesus as a personal Saviour produce power to overcome sin and to do righteousness? Or, to express the present method more correctly, the question is asked, Has victory over sin, which is a fact in the life of at least some men, been won by faith in Jesus?

“Physical science,” says Mr. Huxley, “has nothing directly to do with the criticism of the Gospels; it is wholly incompetent to furnish demonstrative evidence that any statement made in these histories is untrue.” Accepting this statement as removing any objection to Christianity from the side of

physical science, we may add the statement that historic and social science, as will subsequently appear, afford abundant evidence that the statements and the claims of Christianity are true.

Let the inductive method pursued in physical science be applied to moral and social phenomena and the power and the place of Christianity may be ascertained. There are in the world to-day certain visible and palpable phenomena which, in definite forms, embody Christianity. There are churches whose spires point heavenward and whose bells call men to worship. There are congregations of men who assemble within these churches because they are drawn together by a common faith, a common love, and a common hope. There are certain large sums of money contributed for specific objects, and there are societies which disburse this money for the support of present institutions and the establishment of similar institutions in all parts of the world. There are societies which are formed for the express purpose of providing for the poor, of instructing the ignorant, and of helping those who have little power to help themselves. These visible phenomena are the embodiment and the expression of certain

intellectual convictions and spiritual sentiments which are in the minds and hearts of men. These intellectual convictions which lead men to build churches whose spires point heavenward, and these spiritual sentiments which lead men to offer benevolent gifts for the benefit of their fellow men, are evoked and inspired by certain doctrines respecting the character and love and will of God. These doctrines are proclaimed in Christian pulpits, contained in Christian creeds, and set forth fundamentally in the Christian Scriptures. There are three questions, therefore, which may well be asked and which I shall attempt to answer in the following pages. These are as follows: What is the Christian religion? What does Christianity do for men? What does Christianity promise for the future?

Christianity as it exists in a concrete form in the mind and heart of an individual man consists of three things: namely, a certain intellectual belief of the character of God and his relation to men; a certain moral power of resisting evil and of doing good; and a certain hope which is deemed a prophecy and a promise of eternal life.

Christianity, as it exists apart from any

individual man and considered as a system of religion, consists of three things: namely, the revelation of the character, the love, and the will of God; the redemption of men from the penalty and the power of sin; and the regeneration of men, by which they are brought into vital correspondence with God and into the fulfillment of the conditions of eternal life.

Revelation, Redemption, and Regeneration are the essential elements of Christianity. That these three things are claimed by Christianity and for it cannot be questioned. All that is preparatory in the Old Testament and all that is promised in the New Testament fall under these heads. From the opening sentence of Genesis, which declares God to be, in the beginning, the Source of all things, to the words of Jesus, "He that hath seen me hath seen the Father," Christianity claims to be a revelation of the being, the power, the character, and the will of God.

From the first promise of victory over evil to the declaration that "God so loved the world that he gave his only begotten Son, that whosoever believeth in him should not perish but have everlasting life," Christianity claims to be "the power of God unto sal-

vation to every one that believeth." From the first declaration of the danger of death and of the condition of life to the positive doctrine that "Whosoever believeth that Jesus is the Christ is born of God and overcometh the world and hath eternal life," Christianity promises eternal life to them who believe and obey. The task now undertaken is that of applying scientific methods of investigation to certain phenomena which appear under the influence of the Christian religion, and to certain promises of Christianity, that it may be ascertained whether the claims of Christianity can be verified and whether the promises base themselves upon conditions which, if true, insure their fulfillment.

I. REVELATION

CHRISTIANITY claims to be a revelation of the being, character, love, power, and will of God. Can science verify that claim? Science in the common meaning of the term can neither deny nor affirm that claim; for science has no direct knowledge of God with which Christianity can be compared.

Science perceives phenomena and traces them backward from the proximate to the primal cause so far as cause may come within the limit of touch and the scope of vision. Science ascribes every act to some antecedent cause and every quality to some underlying substance, and soon reaches the limit of investigation and consequently of knowledge. Science, therefore, can have no immediate knowledge of God. Science may sweep the heavens with a telescope and survey the stars, but it cannot discover him who made the heavens and who set the stars within them. Science may analyze light by means of a spectroscope, but it cannot discover him who, perchance, may cover himself with light as with a garment. Science

may listen to the thunder and may ascribe it to a proximate cause, but it cannot hear the still small voice of him who, perchance, may speak to the spirit of man. Science cannot know God directly, and therefore it has no standard by which to compare Christianity. Science may indeed know God, mediately, if it be humble and true to its own methods and conclusions. Science observes certain brilliant phenomena in the heavens and ascribes them to electricity, which is the name given to the ultimate cause of whose real nature nothing more is known than the phenomena reveal. Science observes certain phenomenal qualities and ascribes them to matter, which is the name given to the ultimate substance in which they inhere. In like manner, science may observe certain phenomena which are manifestly purposeful and may ascribe them to an intelligent and volitional source. So science may ascribe all purposeful action which lies without the limits of the activity of animate beings to an intelligent and volitional cause and may call this God: but this, although true, would be only a mediate and partial knowledge of God. In like manner, science may observe certain phenomena of Christianity and find it necessary to ascribe them to God as their

source. There is, however, another way in which the methods of science can be applied to the study of Christianity. There are known to men a number of comparative sciences, such as comparative anatomy, comparative physiology, and comparative philology, which aim to ascertain and treat of the fundamental laws and relations pervading objects. Thus two words of different languages may be found to be derived originally from the same root, found in a word of a third language, and this relation is ascertained by means of similarity. From a single bone of an animal, the kind of animal may be determined by means of the relation of structure and size which all the bones of the animal frame bear to each other, and the species and genus may be also determined. In like manner there is, or there ought to be, a science of correlation by which, from one of the reciprocal parts being given, the other may be inferred, or, if that is impossible, may be verified when it is found. For example, if a traveler, walking upon the shore of the sea, should pick up a fin, he would infer that it belonged to a creature related to the water and dependent upon the water for the preservation of life. If a traveler upon the mountain side should

pick up a wing, he would infer that it belonged to a creature related to the air and dependent upon the air for the means of motion or of life. It is possible, for example, to conceive of an eye as existing apart from light; but if a being from another sphere, who had no knowledge of light, should find such an instrument or organ in an animal living in darkness and should afterward find the same animal living in the light, he would have no doubt but that the eye and the light were related and, so far as their relation is concerned, were made for each other. Now every organ of an animal body which does not find the full complement of its normal relation in that body stands related to something without that body. Every appetite and passion of the human mind and heart sustains normally a relation to that which meets its craving and satisfies its desire, and when these are fully met we say the object which satisfies is as real as is the want which it satisfies. There is, therefore, a science of correlation by which, from one reciprocal part being given, the other may be inferred or verified when it is found. A babe is born into the world with eyes; evidently that which stands as the correlate is light. A babe is born with ears; evidently that which

conveys vibrations to the organ of hearing is the correlate. A babe is born with a physical constitution which hungers; evidently that which satisfies hunger and sustains the life of the child is the correlate of this physical want. A man has by nature a certain sexual incompleteness in him; manifestly the love of a woman who satisfies his heart is the correlate of his want and a man and his wife are reciprocally related to each other. A man has a certain craving for friendship; manifestly those associations which meet his want are its correlate.

Science may not be able to discover in all cases what is the proper correlate of an apparent want; but when something is found which meets and satisfies this want, then science is able to determine that what satisfies the want is its correlate and is a reality and true.

It is in the sphere of correlation that scientific methods of investigation can be applied to Christian truth. The proposition may be maintained by all the analogies of life below the religious nature of man, that a natural hunger or want or incompleteness in any being in itself is *prima facie* evidence that there is bread or supply or source of completeness outside of itself.

The question which may well be asked, then, is this: Does Christianity prove to be the correlate of man's religious nature, and does it meet and satisfy his spiritual wants? The answer to this question shall now be attempted.

Man is essentially a religious being, bowing in worship before that whose vastness or power or wisdom or love awakens within him adoration or fear or faith. If we inquire what man worships, the answer may be given from his history that he worships images and idols made by his own hands, stones and sticks formed by nature, fountains and rivers, sun and stars, beasts and birds, deified men and disembodied spirits, nature and God. This answer, however, is historic and superficial, not philosophic and profound. If we inquire, again, what man worships, that is, what corresponds to the thought of his mind and the sentiment of his heart, we find that it is not the form of the object worshiped but that of which the visible form is the symbol, or the spirit which is embodied in it, which awakens and evokes adoration or fear or faith or love. Even a fetich is feared because of the spirit of power with which it is supposed to be indued. It is the knowledge which a deity is supposed to possess

and the power which it is supposed to exercise that call forth worship on the part of man. Fear of an invisible presence, faith in an invincible power, prayer, and offerings to a spirit whose malevolence may be averted, or whose benevolence may be secured, constitute the elements of the lowest forms of worship. In the higher forms of religious life, holiness, wisdom, justice, love, mercy, and grace constitute the object of worship.

Now the God whom Christianity claims to reveal corresponds completely and answers perfectly to the worshipful part of human nature. The God of Christianity is a Spirit, eternal, invisible, and immortal; he is omnipresent, omniscient, and omnipotent; he is holy, wise, just, and good; he is loving, merciful, compassionate, and gracious; he is the Creator of all things; he is the Preserver of all things; he is the Giver of every good and perfect gift; he is the sovereign Ruler of the universe working all things according to the counsel of his own will; he is good to all, and his tender mercies are over all his works; he loves righteousness and hates wickedness; he has no pleasure in the death of any, but seeks to save all from sin; he is the supreme Judge; he will avenge the wicked and he will reward the righteous;

he is "the Lord, the Lord God, merciful and gracious, longsuffering and abundant in goodness and truth, keeping mercy for thousands, forgiving iniquity and transgression and sin, and that will by no means clear the guilty," that is, the incorrigible, whom love cannot win and grace cannot save; he is a God whose righteous judgment will render to every man according to his deeds. To them who do not obey the truth, but obey unrighteousness, he will render indignation and wrath, tribulation and anguish; but to them who by patient continuance in well-doing seek for glory and honor and immortality, he will give eternal life.

A complete knowledge of the God of Christianity and a perfect response to that knowledge will call forth every element of worship which can possibly be found in the human heart. Awe, reverence, adoration, praise, and gratitude, fear, faith, and love, submission, obedience, and hope are all awakened, evoked, and perfected by the God of Christianity. To this fact the prayers of the ages and the hymns of the Church give abundant proof. Now, as all the rays of the solar spectrum when blended give pure white light, so all the elements of worship when united must produce perfect worship; this

perfect worship, which combines every worshipful element found in human nature, is produced only by Christianity. We conclude, therefore, that a God whose being, character, will, and work evoke every worshipful feeling and thought of which man is capable must be, like the ocean to a fish, like air to a bird, like light to an eye, like love to a heart, the counterpart and the correlate of man's religious being and spirit, mind and heart, the everlasting Truth, the eternal Reality.

This fact is evident, also, from the satisfaction of certain spiritual wants which are fully met in the God of Christianity. There are two things which are common in the religious worship of the world: these are sacrifices and priestly intercession. Whatever may have been the origin of sacrifices and of priesthood, they are manifestly designed to avert divine anger, to render the divine mind propitious, and to secure the divine favor. Although they may sometimes simply express a desire to purchase the divine permission to follow a certain course of life, and to receive the coöperation of the divine will, yet they very commonly express a feeling of imperfection, a conviction of sin, and a sense of guilt on the part of the offerer

of sacrifice and the subject of priestly intercession. That which the offerer evidently desires, on whatever grounds he may expect it to be obtained, is the approbation and favor of the Being to whom the sacrifice is offered. If the sacrifice is to avert divine wrath, the offerer craves divine favor; if it is to atone for guilt, he desires pardon; if it is to secure help, he desires divine forbearance and divine assistance; moreover, penitence for sin, repentance of evil, crying out for help, are not confined to any age or any race, but they are human and world-wide experiences.

Now the God whom Christianity claims to reveal is the counterpart of this human want. God is merciful, sparing those who have offended; patient, waiting in longsuffering for the repentance of sinners; forgiving, putting away from his mind the remembrance of guilt; gracious, bestowing favor upon the penitent and humble, and helping all who seek his help. God meets and satisfies all the wants of the human heart which sacrifices and priestly intercessions express.

A third fact in respect of man as a religious being is also apparent. Man is conscious of weakness and dependence, of

ignorance and need; he craves protection and guidance; he seeks illumination and strength; he asks for that inspiration which will give courage and hope. Of this fact the prayers of every race, offered in every land, are ample evidence and proof. In the Hindu Veda we find such a prayer as this: "Indra, give wisdom to us, as a father to his sons. Teach us in this path, let us living see the sun! Let not unknown wretches, evil-disposed and unhallowed, tread us down." In the Hymn of Cleanthes we find this prayer: "O God! from whom all blessings descend, whom the storm and the thunder obey, preserve us from error; deign to inform our minds; attach us to that eternal wisdom by which thou art guided and supported in the government of the world."

And in Euripides is this prayer for light: "Thou God of all! infuse light into the souls of men, whereby they may be enabled to know what is the root from whence all their evils spring, and by what means they may avoid them." Prayer for protection and guidance, illumination and inspiration, knowledge and strength, is common in the world. Christianity claims to reveal a God who sees men and who hears their prayer; who pities them that fear him and loves them that

trust him ; who protects by his power and guides by his providence them that rely upon him ; who gives wisdom to them that ask it and strength to them that have no might ; who provides for all absolute wants ; who lifts away the unnecessary burden of anxious care ; who imparts courage of heart and fortitude of will to bear every burden and to discharge every duty ; who comforts in sorrow and promises victory even in death. All that the human heart craves to fit it for the life of the earth is met in the God of Christianity. Other religions may present some divine attributes which are the correlate of human nature and human need ; Christianity alone presents a God who is the complete counterpart of that nature and the consummate complement of that need. Every element of spiritual worship in man is evoked by the God of Christianity and every spiritual want of man is supplied by him. There are to be found in him mercy for the guilty, pardon for the penitent, peace for the troubled, comfort for the sorrowful, guidance for the ignorant, strength for the weak, hope for the despondent, and life for the dying.

By all the facts and analogies of the laws of correlation and correspondence in the lower realms of life, we must confess that a

God who is to the heart of man what bread and water are to the body, and who is to the soul of man what light is to the eye, must be the living and true God, to believe in whom is peace, to know whom is power, and to love whom is life.

II. REDEMPTION

CHRISTIANITY claims, in the second place, to be the redemption of men from the penalty and the power of sin. Angelic voices are said to have proclaimed Christianity to be glad tidings, and apostolic voices have preached it as the power of God unto salvation to every one that believeth. Can science verify this claim for Christianity? Whether there is any divine wrath which may be averted or any destruction peculiar to the wicked from which they may be delivered, science cannot know and cannot tell. Such things must be either an inference from things that are known or matters of direct revelation. But that there is in the world such a thing as sin, having present power and to a degree at least a present penalty, a comprehensive science of man must see and know. There is such a thing as character and conduct condemned both by him to whom they belong and by the society of which he forms a part. There is a sensuality which dominates and bestializes many men, sinking them in lustfulness, intemperance, and vice. There is a selfishness which limits

the range of the affections, which tends to the disintegration of society, to the destruction of domestic felicity, to the neglect of those who may be dependent, as children, for example, and to indifference to the life and property, the peace and the welfare of others. There is an avarice which would win wealth at the cost of personal truthfulness and honor, at the price of fraud and oppression, at the expense of loss and suffering on the part of others. There is an ambition which longs for power and which often spares neither orphans' tears nor widows' cries nor men's wounds nor human lives if its ends can be attained and its desires gratified. There is to be found in the world a spirit of caste which separates men from one another by almost insurmountable barriers. There are in the world sins which degrade men; sins which disintegrate society; sins which divide mankind into the strong who oppress and the weak who suffer; sins which make a brotherhood of men and a republic of love and righteousness — which would be a kingdom of heaven upon earth — an impossibility. One needs only to read of the bacchanalian feasts which even philosophers frequented, of the prostitutes who were priestesses in certain heathen temples, of the avarice of mas-

ters, of the ambition of rulers, of the absence of organized charity, of the widespread indifference to human suffering, of unmentionable crimes, of cruel and bloody sports, like gladiatorial shows, and of the bitterness and hatred of men of different races or religions to each other, to know that, when Christianity began, sensuality, avarice, ambition, hatred, and cruelty were prevalent in the world. They are prevalent enough now; but great changes have taken place in the last eighteen centuries and greater ones are now taking place. Those changes have, in the main, taken place within the geographical lines which have marked the progress of Christianity, and they have been produced mainly through the influence of Christian faith and Christian practice on the part of men. Christianity claims to be a remedy for the evils which have been specified, not indeed for all men, irrespective of their individual faith and practice — for the power of Christianity is not magical but moral — but for all who believe its doctrines, receive its spirit, obey its principles, and hope for the fulfillment of its promises. “No one,” says Mr. Huxley, “not historically blind is likely to underrate the importance of the Christian faith as a factor in human history or to doubt

that some substitute genuine enough and worthy enough to replace it will arise,"¹ that is, when it has passed away. This is a confession of the fact that Christianity has been of great benefit in bettering the condition of man; that it has surpassed anything else of the kind in the world; and that, if it should pass away, such is the nature and such the need of man that something else must be found to take its place. What this something else is Mr. Huxley does not say. But until something else "genuine enough," that is to say, true enough, and "worthy enough," that is to say, powerful enough, both to meet men's wants and to elevate them, does arise, Christianity must stand first as the correlate of human nature and human need; Christianity must continue to be what it has been, the one factor and force in the world which has proven itself able to save men from the power of sin and to unite them in love and to establish them in righteousness. Christianity's declaration of the wrath of God and of judgment to come, its denunciation of sins (which denunciation conscience repeats), its offer of pardon springing primarily from divine love, its proffer of power for righteousness, its promise of eternal life — certainly

¹The Nineteenth Century, February, 1889.

afford all the strongest motives which can be brought to bear upon the human heart to lead unto repentance and righteousness. The question under discussion, however, is not whether Christianity contains motives to a better life, but whether it produces such a life. That Christianity does produce such a life is evident from the changed character of individuals, the changed conditions of communities, the changed sentiments, customs, laws, and institutions which prevail where it becomes dominant.

(a) From the beginning, Christianity has effected a marvelous change in the lives of individuals. The Christian records from the first contain accounts of such transformations of character and change of purpose and life. There was a sinful woman who, in a Pharisee's house, bathed the feet of the Founder of Christianity with her tears and anointed them with ointment which had probably been purchased to render her own person attractive, and who went from his presence pardoned and at peace. There was a publican whose neighbors called him a sinner, who in the presence and under the influence of Jesus promised, if he had taken anything from any man unjustly, to restore fourfold and to give half of his goods to the poor. There were

two primitive disciples who would have called down fire from heaven upon a Samaritan village which refused hospitality, and who sought the first places in a supposed political kingdom, one of whom subsequently laid down his life in behalf of that Christianity which he believed; and the other of whom lived to teach the lesson of universal love. There was a man who, having land, sold it and brought the money and laid it at the apostle's feet, that distribution might be made to the brotherhood according to their needs. There was a gifted man of intense feeling of caste both of race and religion, who suffered the loss of all things by embracing the Christian religion and who learned under its influence to love Jew and Gentile, Greek and barbarian, and to believe in the brotherhood of men. Sensuality, avarice, ambition, and pride passed away under the influence of Christian purity, benevolence, humility, and love. That which marked Christianity in its inception, and which I have merely indicated, continued to mark its course. The historian Gibbon, who certainly was not prejudiced in favor of this religion, says: "The friends of Christianity may acknowledge without a blush that many of the most eminent saints had been before their baptism the

most abandoned sinners. As they emerged from sin and superstition to the glorious hope of immortality, they resolved to devote themselves to a life, not only of virtue, but of penitence. The desire of perfection became the ruling passion of their soul." Were it deemed best the names of men could be given whom philosophy and learning had left in sensuality and sin, who were lifted into purity and truth by the power of Christianity. Such changed lives have marked the course of Christian progress to the present day. That bad men have been, and are, found where Christianity prevails no one denies; but they are not Christian men. That selfish, sensual, avaricious, and ambitious men have obtained high positions in the Church during her organic history is an unquestionable fact. But such men will sometimes be Pharisees in dress, Papists in profession, and Puritans in outward deportment, when that is the way in which selfishness can be satisfied, avarice gratified, and the ends of ambition attained. Moreover, an ecclesiastical organization, like any other organization, may become corrupt when corrupt men use it for their own ends. Christianity, however, must be sought for, not in those who know it, but in those who love it; not in them who profess it simply, but

in them who practice its principles. Christianity must be judged by those who receive its spirit and who, as the historian Motley says, were to be found in the darkest ages of the Church's history "feeding the hungry, clothing the naked, incarnating the Christian precepts in an age of rapine and homicide, doing a thousand deeds of love and charity among the obscure and forsaken — deeds of which there shall never be human chronicle, but a leaf or two perhaps in the Recording Angel's book." And a just comparison of Christianity, whether in an individual or a community, in any period of time, must be a comparison with the state which precedes its introduction and not a comparison with a period more advanced. The history of the Church, the annals of religious life, and the testimony of multitudes of men, both of their own personal experience and of their observations, is to the effect that Christianity, loved and lived, saves men from the power of sin. The power of Christianity is seen, not only in those in whose character it produces a radical change, but also in those who are reared under its influence and who live according to its truth. A garden which produces flowers is good whether it has ever been overgrown with weeds or not; and

a system of religion which produces pure women and righteous men out of the children who believe its truth and obey its principles must be likewise good. It is true that there are sad departures and grievous falls from Christian life on the part of many reared in the Christian Church ; but it must be remembered that these departures, and falls are occasioned, not by Christian truth, but by departure from that truth and failure to receive and to retain the Christian life. There is not a community in Christendom in which, if the opinion prevails that any given man loves Christian doctrine and is guided by Christian principles, his reputation and credit are not thereby enhanced.

(b) The practical power of Christianity is manifested in its effect upon communities. The introduction of a loving and a vital Christianity into an immoral and degraded part of a great city has often been followed by a marked change in the outward deportment and a marvelous change in the inward disposition of the inhabitants. Lustfulness and intemperance have decreased, immorality has diminished, the comforts of life have been multiplied, the lines of care have passed away somewhat from the faces of the poor, and the mental and moral life of

the people have been greatly elevated. Similar changes, with even greater results, have followed the introduction of the Christian religion into many of the islands of the sea, as the history of the islands of the Pacific abundantly testifies. The power of Christianity is equally manifest in the fact that of two communities otherwise similarly circumstanced, the one in which practical Christianity is the more powerful and prevalent as a part of the life of the people will be the better community of the two, and two or three generations will reveal the fact that in the realm of morals the gravitation of the one is upward and that of the other downward. The power of Christianity is evinced also by the deterioration of any community from which, for any cause, it is banished. The decay of churches and the moral deterioration of communities in Asia, in some places in Europe, and in localities in the United States testify to this fact. The deterioration of people on the loss of Christianity is as certain a sign of its invigorating and elevating power as the decay of a tree, when the life is withdrawn, is evidence of the fact that the blossoms and fruit formerly upon the tree were the product of the vital force which is now lost. It is true that

there have been nations who have professed to believe Christianity, and who have depended upon it as a sort of magical power, who have not been much benefited by its presence among them. But it is a well-authenticated fact of history that wherever any nation has relied upon the moral power of Christianity, and has practiced its principles, the character of the nation has improved.

(c) The power of Christianity is manifested in changed sentiments, laws, and customs of countries. These changes have been slow, for institutions and nations are normally conservative, and there are always many who believe in what is established because it is established. Other causes have coöperated with Christianity in producing changes in the public sentiments, the social conditions, and the civil customs of people; but the fact that many of the best and the most beneficial changes proceed primarily from the principles of Christianity, progress with its progress, and prevail with its prevalence, affords ample proof that Christianity is the fundamental cause of these changes. It has been well said that "there has been no sustained historical progress except that which has been confined to Christian nations."

The limits of this work will not permit an attempt to write a history of the changes which Christianity has wrought in the world, nor will such a history be needed by the intelligent reader. It will be sufficient to indicate some of the lines of change.

The first preachers of the gospel were men of a peculiarly prejudiced race, who believed that salvation was for their nation alone. It may be said, indeed, that some of these men did not outgrow this prejudice; but the prominent fact to which attention is now called is that the men who did outgrow this prejudice and come to believe in the universal love of God and in the brotherhood of men were converted Christian Jews. That which Christianity did in their case it has continued to do, and more than any other force in the world it removes prejudice, breaks down barriers, and binds men together in brotherly love. The high-caste Brahman in India to-day, like the Pharisee in Judæa eighteen centuries ago, when he becomes a Christian, learns to put away the spirit of caste which separates him from men of his own nation, and to love likewise men of all lands. The early Christians practiced a loving and liberal charity. It has been said that "the world before Christ came was

a world without love"; but there were always acts of individual kindness, a gift for the beggar and some help for the poor. Christianity, however, increased human love and organized charity. "The new thing," says Uhlhorn in his work on "Christian Charity in the Early Church," "the thing hitherto unknown in the world, was rather that in the Christian communities there was organized a regular system of charity, designed not only to relieve the distress of the poor for the moment, but also to war against poverty itself, and to suffer no one to be oppressed by want." There was in the heathen world a liberality which sometimes gave gifts freely. Christianity introduced a love which seeks to remove evils, to cure disease, and to secure good. The Emperor Julian confessed frankly that he intended in the restoration of paganism with the incorporation of some Christian virtues in it to deprive the Christians of the applause, as well as the advantage, which they had acquired by the exclusive practice of charity and beneficence. Christianity has introduced and established in the world asylums, hospitals, whose French name (*Hôtel Dieu*) is an exponent of their origin; and schools of various kinds whose design is to provide for

the unfortunate, to relieve the suffering, and teach men to help themselves; and that which Christian people did originally at their personal expense is now done largely at public expense; so thoroughly has this part of Christian life permeated the society of Christendom.

Christianity has done much to secure the natural rights of men. In the Roman Empire in her palmyest days, out of a population of 120,000,000 there were 60,000,000 slaves. However much may be said of the position and comparative freedom of many of these slaves, yet this one fact shows the horrors of war, in which captives might be enslaved, and the disregard of the rights of men, when half the people of the greatest empire in the world might be the property of the other half of the people. Christianity did not introduce revolutionary practices into the kingdoms of the world, but revolutionary principles; and, though progress has been slow, the world has been slowly becoming revolutionized by those principles. The virtue of women, the liberty of men, and the life of every human being have come to be more sacred and more secure through the influence of Christianity. There are kings yet in Christendom, but their power over

the life and thought and property of men has been greatly lessened. There are nobles, but the honor which they receive must be won mainly by nobility of character. There are classes in society, but the rights of each class are more justly secured. Throughout the Christian world the tendency is toward the recognition of the natural rights of every man. There are some, indeed, who claim rights and deny duties, but duties will surely come to be combined with rights and to be equally recognized and equally enforced. Meanwhile it is apparent that the prevalence of Christian principles in any part of the world is always productive of good.

(*d*) The peculiar power of Christianity is seen in her missionary spirit and work, which are so prominent in the present century. There are foreigners who come to Christian lands to learn for their own profit; missionaries go to foreign lands to teach for the profit of others. There are men who come to Christian lands and men who go from Christian lands to foreign ones to get gain; missionaries go to give, not to get. The heart of Christian missions is love, its spirit service, its aim to do good, its end to bless others by a knowledge of the truth and

a life of righteousness. In missions the divine spirit of Christianity is revealed, and in their results, as eighteen centuries show, the divine power of Christianity is manifested.

(e) Finally, Christianity tends to bring men into the relation of a brotherhood and to produce peace upon earth and good will among men. It is true that there are evils in the world, but they are lessened. It is true that there are wars, but war is no longer the chief business of great nations. Peace congresses, commissions of arbitration for the settlement of national difficulties, and world's fairs for the peaceful purposes of commerce are some of the results and evidences of a growing Christian civilization. A religion whose tendency and whose power is to save men from sin, to secure the natural rights of men, to unite men in practical brotherhood, to secure peace upon earth and good will among men, must be a religion which stands as the counterpart of human need, a divine reality, a living truth, a positive power whose prevalence would produce the highest good of men and would establish a kingdom of heaven upon earth.

III. REGENERATION

THE third fundamental element of Christianity is the doctrine of regeneration and eternal life. The doctrine briefly stated is this: Christianity produces in those who receive it such a quickening of moral feeling, such an elevation of moral affection, such enlargement of thought and loftiness of purpose as bring them into vital correspondence with the living God and secure for them eternal life. The mission of the Founder of Christianity, whatever else it may have been designed to accomplish, was to impart this life unto men. In him was life. As the Father hath life in himself, so hath he given to the Son to have life in himself. As the living Father sent him and he lives by the Father, so he that eateth him — that is, receiveth him within himself — shall live by him. He is living bread. He is a life-giving spirit. He is a vine and they who receive him are branches. He that believeth on the Son hath everlasting life; and he that believeth not the Son shall not see life. He that hath the Son hath life; and he that hath not the Son of God hath not

life. For the wages of sin is death; but the gift of God is eternal life through Jesus Christ.

There are three questions which may be asked and the answering of which will now be undertaken. These are as follows: Is regeneration scientifically possible? Is there any evidence that regeneration is a reality? Does the Christian doctrine of immortality rest upon a basis which affords the scientific conditions of eternal life?

(a) In answer to the first question, "Is regeneration scientifically possible?" the reply may be given that it is not only scientifically possible, but also scientifically probable. Throughout the realm of vital and animate nature with which we are familiar, first forms of life are rarely ever complete forms, but commonly embryonic existences whose quickening, development, and perfect life depend upon certain conditions and correspondences. A seed, such as a grain of wheat or an acorn, is not a dead thing, but a vital thing; yet it can never be anything else than a seed until it receives and responds to the genial, vitalizing energy of the sunlight and until its latent energies are awakened and brought into correspondence with soil and sun. A mammalian ovum is a vital

entity, yet it can never be anything else than an ovum until it is quickened by that which corresponds to it and develops all its possible powers. In the lower ranges of animal life the first forms of living creatures pass through transformations which depend upon their fulfilling certain conditions before the highest possible form is reached. The case of a butterfly will occur as one of the most familiar. A bird within its shell and a babe within the matrix have both a foetal life and the possibility of a larger life; but this latter can only be obtained by entrance into a larger sphere and by correspondence with earth, air, and sun, by which organs and faculties latent, and otherwise destined simply to die imperfect, may be developed.

In like manner, there are affections, like the conjugal and parental affections, which lie dormant in the human breast, and which undeveloped leave the nature within a more limited range of life than would otherwise be obtained, which are awakened and evoked by the touch of another spirit and the warm love of other hearts, and which are perfected by certain correspondences. Both the intellectual and the social nature of man may exist within very narrow limits, they may also be expanded and elevated by certain

mental and emotional quickenings and correspondences. A first form of life and a second form of life, a first birth and a second birth, a first kingdom with a low and limited range of vital correspondence and a second kingdom with a higher and a wider range of vital correspondence, are common facts in nature. The New Testament doctrine that the first man is of the earth and was made a living soul (*psyche*), and that he needs the quickening touch of a second man, a man from heaven, who is a life-giving spirit, (*pneuma*) before he can receive the things of the Spirit of God and bear a divine image and inherit a heavenly kingdom, is in complete analogy and in perfect accord with the scientific facts of the vegetable, the animal, the mental, and the social spheres of life to which attention has been called. It is in entire agreement with the various forms and forces and facts of life in lower spheres that Christianity affirms that a man must be born from above; that that which is born of the flesh is flesh, and that which is born of the Spirit is spirit; that that is not first which is spiritual (*pneumatikon*), but that which is natural (*psychikon*), and afterward that which is spiritual.

The Christian doctrine of the new life

and the second birth is not that any new physical organ or physical faculty is given to man, but that by an influence coming in upon him from without and from above, feeling, conscience, affection, and will are brought into sensible relation and responsive correspondence with God, as the organs of a bird are brought into sensible relation and responsive correspondence with air and sunlight when it quits the shell. The conscience, the affections, the desires, the aspirations, the volitions, the aims of the regenerate soul bear relation to a higher realm than the visible universe, to a holier Being than man, and to another life than that of earth, so that the man is said, by virtue of this fact, to be a new creature. We conclude, therefore, that there is no scientific impossibility of such an experience in human life, but abundant analogy from which the possibility of such a fact might be inferred, or when taught might be confirmed.

(*b*) In answer to the second question, "Is there any evidence that regeneration is a reality?" the reply may be given that there is the same kind of evidence of the existence of a spiritual and a heavenly life as of any other form of life. Two things chiefly indicate the existence and the grade of life.

These are irritability and hunger. Irritability is sensibility to impressions. Hunger is the expression of a want and of a desire for possession or correspondence. There are forms of life, such as are found among the lower animals, which are sensible of physical qualities in objects, but which are insensible of moral qualities. Manifestly, their life lacks the moral element. There are men likewise who are affected by certain physical and by some moral qualities, but who are insensible to other moral qualities. For example, there are men who would have admiration for him who should by force kill his enemies or die in the attempt, but who would have no appreciation of the act of him who would voluntarily suffer indignity from a purely moral motive. There are men whose affections, thoughts, and aims are practically limited by things visible or palpable or that minister to the present wants of this life and who may well be called fleshly and worldly; for the scope of their hunger is limited by the flesh and the world.

There are likewise men to whom the thought of God is the supreme thought, who see his glory in the heavens, his goodness in the earth, his power in the course of human history, and the accomplishment of his

purpose in the consummation finally to be attained. There are men who crave his love, who seek his guidance, who strive to serve him, and who for his sake do deny the lusts of the flesh, sacrifice oftentimes success in the world, and live from the hope of things that are invisible and yet to be revealed. There are men whose spiritual irritability, that is to say, whose sensibility to the reality of God and his relation to them, is so acute, and whose spiritual hunger, that is to say, whose desire for the illumination, inspiration, and approbation of God, is so great and so constant that they may well be called spiritual and heavenly men. The thought of God dominates their mind, the love of God animates their heart, and the desire to please God controls their will. Whether these men have become so by a direct act of divine power within them, irrespective of any volition upon their part, or by absence of that resistance of such power as others may have exercised, and by voluntary coöperation with that divine power, it is needless for us, in this present line of argument, to inquire. All that lies before us is to ascertain whether there are in the world any men whose lives give evidence that they have such sensibilities and desires, such feelings and such volitions, such

affections and such acts as entitle them to be called regenerate men, in whose heart the thought of God dominates. And we conclude from the facts of history and from the observation of men that there are such men, and the only scientific explanation of their character and life which meets the demands of the case is that which admits the reality of regeneration and the spiritual life.

There is, as a matter of fact, in this world a difference in the inward affections and in the aims and purposes of men. As this difference exists between men who in intellectual attainments, social affections, and common deportment among men may be much alike, it may be well to note, in passing, that resemblances are always most marked in the beginnings of life, and the differences most marked at the time of complete development. In the early stages of his foetal life man is like any other mammal; but how vast the difference in his mature life! However much a regenerate man may seem to be, outwardly, like the man of the world, yet because in his heart God is first we may well say, It doth not yet appear what he shall be; but when Christ who is his life shall appear he shall be like him. The germ will then have blossomed into its divine beauty and glory.

Christianity is scientific when it makes a radical distinction between the man who is born of the flesh and so united to the human race and the man who is born of the Spirit and so united to God. Christianity is scientific when it makes a distinction in its classification between the natural man, who is in correspondence with changeable and transient nature, and the spiritual man, who is in correspondence with the unchangeable and eternal God. Christianity is scientific when it teaches a difference in destiny between the man who obeys not the truth but obeys unrighteousness and does evil, and to whom God will render indignation, tribulation, and anguish, and who shall perish, and the man who by patient continuance in well-doing seeks for glory and honor and immortality, to whom God will render eternal life.

(c) The third question, "Does the Christian doctrine of immortality rest upon a basis which affords the scientific condition of eternal life?" must now receive attention and an answer.

Science, which has no vision of the future and therefore no knowledge, can only pass judgment upon the conditions upon which Christianity bases the doctrine of eternal life and pronounce them sufficient or insufficient.

Lotze says: "It is relations in which the 'being' of things consists, and by which it is distinguished from 'not being.' In more general terms, 'to be' means to stand in relations, and being perceived is itself only one such relation beside other relations. There *is* actually nothing which does not stand in relations; or all 'that is' does stand in relations."¹ This is undoubtedly true of any being and of every being who is not self-existent and self-sufficient. Mr. Darwin says: "The expression of the conditions of existence, so often insisted upon by the illustrious Cuvier, is fully embraced by the principle of natural selection."² The law of the conditions of existence, according to Mr. Darwin, is a higher law than the unity of type; for upon the fulfillment of the conditions of existence by correspondence both the continuance and the perfection of a living being depend.

Mr. Spencer says: "Perfect correspondence would be perfect life. Were there no changes in the environment but such as the organism had adapted changes to meet, and were it never to fail in the efficiency with which it met them, there would be eternal existence and eternal knowledge."³

¹ *Outlines of Metaphysics.*

² *Origin of Species*, p. 166.

³ *Principles of Biology*, p. 88.

Mr. Drummond, another scientist, says: "It has been reserved for modern biology at once to defend and illuminate this central truth of the Christian faith. And hence in the interests of religion, practical and evidential, this scientific definition of eternal life is to be hailed as an announcement of commanding interest."¹ According to the above statements and concessions of eminent scientists and philosophers, perfect and permanent correspondence on the part of any being with a perfect and a permanent environment would constitute and secure eternal life, a life eternal both in its quality and in its duration. This correspondence, however, must be sought with something else than the visible and changeable universe. The authors of "The Unseen Universe" say that "the whole visible universe will, if finite, become a lifeless mass, if indeed it be not doomed to utter dissolution. It is a glorious garment, but not an immortal one. We must look elsewhere if we are to be clothed with immortality as with a garment." It is precisely this elsewhere to which Christianity bids us look. The scriptural authors who write of the unseen universe tell us, likewise, that the earth and the heavens

¹ *Natural Law in the Spiritual World*, p. 204.

shall wax old as a garment, and as a mantle shall be rolled up and changed and perish; but they also tell us of One whose years shall not fail, who shall remain forever, and who shall be forever the same. They tell us that to know him, the only true God, is eternal life. They tell us, indeed, that "the world passeth away and the lust thereof"; but they also tell us that "he that doeth the will of God abideth forever." In this the Scriptures are eminently scientific. It is upon vital communion and correspondence with the eternal God in affection, thought, volition, and action that Christianity bases the doctrine of eternal life.

The common belief of the world, as language proves, is that man is a dual being, consisting of body and soul. To say that soul is the product of bodily organization is to affirm that which has never been proven and has commonly been disbelieved in the world. All the chemical constituents of the brain may be brought together, but there is no thought. By galvanic stimulation, the nervous system of a dead animal may be thrown into action, but there is no evidence of consciousness or volition, that is to say, no evidence of soul. Whether soul be regarded as a distinct entity having its own

life apart from the life of the body, or as the entity which gives the body life and organizes it and upon which, therefore, the body primarily depends, it is not necessary for our purpose to decide. If there are sensory nerves which bear impressions from the physical world to an inward center of consciousness, there are also motor nerves which bear impressions, that is, volitions, from the psychical center to the physical world. As there are physical phenomena and therefore physical being, so there are psychical phenomena, and therefore psychical being. "Suppose, then, we expose the brain of a living man in a state of intense activity. Suppose, further, that our senses were absolutely perfect, so that we could see every change, of whatever sort, taking place in the brain substance, what would we see? Obviously, nothing but molecular changes, physical and chemical; for to the outside observer there is absolutely nothing else there to see. But the subject sees nothing of all this. His experiences are of a different order: namely, consciousness, thought, emotions, etc. Viewed from the *outside*, there is — there can be — nothing but motions; viewed from the *inside*, nothing but thought, etc.: from the one side, only *physical* phe-

nomena ; from the other side, only *psychical* phenomena. Physical and chemical forces and phenomena are indeed incomprehensible in their essential nature ; but once accept their existence, and all their different forms are mutually convertible, construable in terms of each other and all in terms of motion. But it is impossible by any stretch of the imagination to thus construe mental forces and mental phenomena.”¹

That is to say, consciousness, the psychic element in man, — the soul, — is an entity having its own motions and laws as the physical element — the body — has its motions and laws. It is possible at least to conceive of this psychic element as existing and acting according to its own nature independently of the physical element, and even apart from it, just as the body may preserve its form and be to a degree made to act after the psychic element is lost. In vertebrate animals, if the brain is removed, the power of volition and of automatic action is lost, although in some cases the power of reflex action remains. For example, if the cerebral lobes be removed from the brain of a frog, the power of volition is lost, though all the rest of the brain remains. If appropriate

¹ Le Conte, *Evolution and its Relation to Religious Thought*, p. 291.

stimuli be applied to such a frog, it can be made to crawl, leap, and swim. Its actions are natural, but they never take place except under external stimulus. They take place when stimulus is applied; they end when stimulus ceases. There is no volitional action. The difference between such a frog and a whole one is twofold: the former never acts except under external stimulus; the latter acts by volition also; the former under stimulus will do just certain things; the action of the latter is uncertain, as the element of will may change the action from what is expected. If the spinal cord alone remains in a frog, certain reflex actions will take place under stimulation, but the power of directing these actions has disappeared with the removal of the optic lobes, the cerebellum, and the medulla oblongata. If the cerebral hemispheres are removed from a bird, all signs of distinct volition and all indications of intelligence will be wanting. In a mammal, under the same conditions, similar phenomena may be observed. The animal under stimulus may execute ordinary acts, but there is nothing to indicate intelligence, and, left alone, the animal will remain motionless as a statue until death occurs. From the above facts, we find this to be the

case when consciousness and the power of volition are destroyed in an animal by the removal of certain central nervous parts, and when the animal would remain utterly motionless of itself, the application of external physical stimulus will produce physical motion, moving according to the structure and laws of the animal body. Now if we conceive of a physical environment which would not destroy but would preserve such an unconscious animal body indefinitely, and would act upon it in the way of stimulation, there would be a bodily form and bodily action indefinitely continued after the conscious element has ceased to act within the body. Our only claim here is that the conscious element has ceased to act upon the physical element. The question may well be asked, If the physical element of an animal may continue to exist in relation to a physical environment and to be stimulated by such environment and to act according to its nature after the conscious element has ceased to act upon it from within, may it not be possible, at least for the psychic element — the soul — to continue to exist in relation to a psychic environment and to be stimulated by that environment and to act according to its nature after it has lost the physical element

of being? This latter seems to be as possible as the former, although in the nature of the case we can adduce no proof that it is so. Its being so must be a matter of revelation and its acceptance a matter of faith. But, if it be admitted that there is a psychic element in man, which may exist in a psychic environment, and if correspondence therein may be eternal, then the conditions of eternal life are scientifically met.

This is precisely what Christianity teaches. Christianity teaches us that men live primarily not in the world but in God. "In him we live and move and have our being." Christianity teaches the dual nature of men and the superiority of the soul to the body and its independence of the body so far as its existence is concerned. Christ says: "Fear not them which kill the body (*soma*), but are not able to kill the soul (*psyche*): but rather fear him which is able to destroy both soul and body in Gehenna." Christianity teaches the existence of this soul or *psyche* after death. When he was expiring upon the cross Jesus said, "Father, into thy hands I commend my spirit," and the Greek word *pneuma* used here is evidently in this place equal to *psyche*. St. Paul teaches that though the outward man of a Christian is

perishing daily, yet the inward man is being daily renewed, and affirms that though the outward dissolve and pass away, yet the inward shall have a dwelling with God. The eternal life, in the conception of the New Testament, belongs to every one who knows God and believes in him and does his will, and hence is in abiding correspondence with him. The doctrine of the New Testament is that the visible and palpable world is destined to pass away, and they who are only in correspondence with it are in correspondence with that which is temporal, transient, and perishable; but God who made the worlds abides forever, and they who by love are in correspondence with him are in correspondence with that which is eternal, abiding, and imperishable, and have, by virtue of that fact, eternal life and shall live forever. I do not raise the question at this time and in this discussion as to the final end of them who do not know God by love and do not believe in him by faith and do not obey his will, and therefore do not correspond with him, but correspond simply with the visible universe and created beings like themselves. Manifestly their affections are rooted in the things which are transient and perishable, and not in the living God who is imperish-

able and eternal. Whether God shall exert his power upon them *ab extra* to preserve them in being when they have no vital correspondence with himself, when they have no goodness of character, when they are of no benefit to the universe, — for evil cannot be a benefit, — or whether they shall at last pass away and perish with the perishable universe with which they correspond, and the good alone who correspond with the imperishable God shall survive — which is in full accord with the scientific doctrine of correspondence and “the survival of the fittest” — it is not within the purpose and scope of this treatise to say. All that is now claimed — leaving the wicked out of the question altogether — is that Christianity affords a basis and a condition of eternal life for those who are Christians, which is eminently in accord with the teachings of science. Mr. Spencer, speaking in the name of science, says: “Perfect correspondence would be perfect life.” Hermann Lotze, speaking in the name of philosophy, says: “Touching *immortality* in general, we simply hold the principle to be valid, that everything which has once originated will endure forever, as soon as it possesses an unalterable value for the coherent system of the world; but it will as

a matter of course in turn cease to be, if this is not the case." Dr. Dorner, speaking in the name of theology, says: "Accordingly, everything depends on the communication of the divine life to man being assured. This is only secured to Christians through Christ. Hence, therefore, it is sufficient to have recognized the possibility of the soul's immortality and its destination for this." St. John, speaking in the name of Christianity, says: "And this is the record, that God hath given to us eternal life, and this life is in his Son. He that hath the Son hath life; and he that hath not the Son of God hath not the life. And we know that the Son of God is come, and hath given us an understanding, that we may know him that is true, and we are in him that is true, even in his Son Jesus Christ. This is the true God, and eternal life." And Jesus, speaking in the name of God, says: "God so loved the world, that he gave his only begotten Son, that whosoever believeth on him should not perish, but have eternal life."

The conditions of immortality which science demands and which philosophy declares to be sufficient are afforded by Christianity and are fulfilled in the regeneration effected by Jesus, the Christ, in whom, and through whom, and by whom is eternal life.





